

STIC Search Report Biotech-Chem Library

STIC Database Tracking Number: 197922

TO: Ginny Portner

Location: REM/3B02/3C18

Art Unit: 1645

Monday, August 14, 2006

Case Serial Number: 10/764212

From: Vira David

Location: Biotech-Chem Library

REM-1A41

Phone: (571)272-1972

Virajita.David@uspto.gov

Search Notes

Examiner Portner,

See attached results.

If you have any questions about this search feel free to contact me at any time.

Thank you for using STIC search services!

Vira David Intern STIC Biotech/Chem Library (571)272-1972





STIC SEARCH RESULTS FEEDBACK FORM

Biotech-Chem Library

Questions about the scope or the results of the search? Contact the searcher or contact:

Mary Hale, Information Branch Supervisor 571-272-2507 Remsen E01 D86

Voluntary Results Feedback Form
> I am an examiner in Workgroup: Example: 1610
Relevant prior art found, search results used as follows:
☐ 102 rejection
☐ 103 rejection
☐ Cited as being of interest.
Helped examiner better understand the invention.
Helped examiner better understand the state of the art in their technology.
Types of relevant prior art found:
☐ Foreign Patent(s)
 Non-Patent Literature (journal articles, conference proceedings, new product announcements etc.)
> Relevant prior art not found:
Results verified the lack of relevant prior art (helped determine patentability).
Results were not useful in determining patentability or understanding the invention.
Comments

Drop off or send completed forms to STIC/Biotech-Chem Library (Remson Bidgs



STIC-Biotech/ChemLib

197922

From: Portner, Ginny

Sent: Tuesday, August 08, 2006 12:54 PM

To: STIC-Biotech/ChemLib

Subject: 10/764,212

please search sequences 16, 18 and 20, and oligomer search with respect to amino acid sequences

Ginny Portner Remsen Building Art Unit 1645 Room E03, B02; Mail Box 3C18 (571) 272-0862

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Result
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Maximum Match 100%
Listing first 45 summaries
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Abg30884 H. pylori
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Aeb70135 Helicobac
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Aeb70131 Helicobac
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Aeb70131 Helicobac
Adg27355 Alpha-1,3
Aeb70141 Helicobac
Adg27355 Alpha-1,3
Aeb70141 Helicobac
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                                                                                                                                                                                                                                             Description
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pylori
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Fucosyltransferase; protein production; enzyme

Helicobacter pylori fucosyl transferase, FutB, protein, SEQ ID NO:

16

06-OCT-2005 AEB70145;

(first entry)

AEB70145 standard; protein;

446

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1804 1192 1192 1192 1193 1197 1183.5 1142 1142 1112 1111 1008 975 975 975 975 975 975 975 975 975 975	1815 1812.5
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ALIGNMENTS

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RESULT 1
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XX Fuco
XX Heli
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N-PSDB; AEB70144.
                                                                      Claim 1; SEQ ID NO 16;
                                                                                                                              New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
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The present invention provides alpha-1,3/4-fucosyltransferase (also

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                                                                                                                                                        Helicobacter
                                                                                                                                                                                                                                        Helicobacter
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29-MAR-1999
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    Peptide
                                                         Modified-site
                                                                                     Modified-site
                                                                                                                                                                                    mucosal
                                                                                                                                                                                                             Alpha-1,3-fucosyltransferase; fucT gene; Lewis X; Lewis Y;
                                                                                                                                                                                                                                                                                                             AAW86008;
                                                                                                                                                                                                                                                                                                                                     AAW86008 standard; protein;
                                Modified-site
                                                                                                                Modified-site
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                                                                                                                                                                                  Lewis X; tumour associated antigen; l disease; diagnosis; fucosylated ol:
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137. 139
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                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                            Matches 393;
                                                                                                                                                                                                                                      This is the amino acid sequence of the novel alpha-1,3-fucosyltransferase of Helicobacter pylori NCTC 11639, as deduced from the newly isolated fucT gene (see ANV80321). The enzyme is characterised by 8 C-terminal heptad repeats and by the lack of a transmembrane domain. The absence of a transmembrane domain allows the enzyme to be readily released from recombinant host cells. The enzyme can be used in the production of fucosylated oligosaccharides such as Lewis X, Lewis Y and sialyl Lewis X, which are structurally similar to certain tumour associated antigens found in mammals. These glycoconjugates also have research and diagnosis utility in the development of assays to detect mammalian tumours. The enzyme can also be used to raise specific antibodies. Inhibition of abnormal fucT gene product activity can be used for the treatment of intestinal mucosal disease. (Updated on 17-OCT-2003 to standardise OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      New isolated alpha-1-3-fucosyltransferase gene - obtained from Helicobacter pylori, used to develop products for the diagnosis treatment of intestinal mucosal diseases, e.g. tumours.
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N-PSDB; AAV80321.
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                                                                                                                                                                                                                Sequence 464
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                                                                                                                       MFQPLLDAYVESASIEKMASKSPPPLKIAVANWWGDEBIKEFKKSVLYPIFSQRYTIALH
             RMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKR
                                                                    QNPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYL
                                                    QNPNEFSDLVFGNPLGSARKILSYQNAKRVFYTGENESPNFNLFDYAIGFDELDFNDRYL
                                                                                                        MFQPLLDAYVESASIEKWASKSPPPLKIAVANWWGDEEIKEFKNSVLYFILSQRYTITLH
  RMPLYYDRLHHKABSVNDTTAPYKLKDNSLYALKKPSHCFKEKHPNLCAVVNDESDPLKR
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378. .384
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435. .437
/note= "Asn is N-glycos"
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87.1%;
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                                                                                                                                                            15;
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                                                                                                                                                            Score 2081; DB 2;
Pred. No. 3.9e-174;
5; Mismatches 27;
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181

GVVSFVASNANAPMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN

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               Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
                                     N-PSDB;
Claim 6; Fig 2A; 37pp;
                                                            Taylor DE,
                                                                                          05-JUN-1998;
                                                                                                         07-DEC-2000; 2000US-00733524.
                                                                                                                                        US2002068347-A1
                                                                                                                                                                                                                   Misc-difference
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                                                                           (UYAL-) UNIV ALBERTA.
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                                     2002-582480/62.
DB; ABK89249.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PLASIDDLRV---------NYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVN 406
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                                                                                                                                                                                                                                                 214
                                                                                                                                                                                    /note= "Encoded 278
                                                                                                                                                     /note= "Encoded by GT"
465. .501
/note= "Region not encoded by sequence appearing
ABK89249"
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English
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The invention relates a purified transmembrane segment-free alpha 1,3-CC Greu-Argy, 3-x4-Tyr, where x1, x2-and x4 is Asp or Asn, and x3 is Cleu-Argy, 3-x4-Tyr, where x1, x2-and x4 is Asp or Asn, and x3 is Cleu-Argy, 3-x4-Tyr, where x1, x2-and x4 is Asp or Asn, and x3 is Cleu-Argy, x3-x4-Tyr, where x1, x2-and x4 is Asp or Asn, and x3 is Cleur-Argy, x3-x4-Tyr, where x1, x2-and x4 is Asp or Asn, and x3 is Cleur-Argy, x3-x4-Tyr, where x1, x2-and x4 is Asp or Asn, and x3 is Cleur-Argy, x3-x4-Tyr, where x1, x2-and x4-tyr, and x3 is Cleur-Argy, x3-x4-Tyr, which call a solution of the protein call and call and encoding the protein Cleur-Argy, and x3 is Cleur-Argy, x3-x4-Tyr, which call a solution relation and a gene expression system for producing transmembrane segment-free alphal, 3-fucosyltransferase, comprising a host cell modified with the nucleic acid or its contacting the protein with a substrate such as LacNac-R and GDP-fucose, and purifying the produced oligosaccharides, or by culturing the cell, contacting the protein with a substrate, to produce oligosaccharides and purifying the obtained oligosaccharides, or by culturing the cell, cas a probe for detecting the nucleic acid, by contacting a sample with a consider cell with a substrate, to produce oligosaccharides to alphal,3-fucosyltransferase polymucleotide, and detecting the nucleic acid, by contacting a sample with a constraint of the probe, or by culturing the colling the nucleic acid, by contacting a sample with a constraint cell is useful for producing a transmembrane segment-free alphal,3-fucosyltransferase fusion protein, by growing the host cell containing a correspondent and isolating the fusion protein and secretion of the protein of the fusion protein, by growing the host cell containing a correspondent of the protein in the sample. The presence of the protein in the sample is indicative of infection by Helicosomers. The antibody is useful conductions which allow expression and secretion of the protein in the sample in the development of assays to
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Query Match 86.8%; Score 2073; DB 5; Length 501; Best Local Similarity 87.1%; Pred. No. 2.2e-173; Matches 393; Conservative 15; Mismatches 27; Indels 16; Gaps

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407
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                                                                                                                                                                                                                                                                                                                                                                                                                                MFQPLLDAYVESASIEKMASKSPPPLKIAVANWWGDEEIKEFKNSVLYFILSQRYTITLH
                YERLLQNASPLLELSQNTSFKIYRKAYQKPI 437
                                                                                                         PLASIDDLRV-----
                                                                                                                                         KNAYLDMLYENPLNTLDGKAYFYQNLSFKKILAFFKTILENDTIYH - - DNPFIFCRDLNE
                                                                                                                                                               PNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFMWECDLDE
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YERLLSKATPLLELSONTTSKIYRKAYOKSL 449
                                                                    PLYTIDDLRVNYDDLRVNYDDLRINYDDLRVNYDDLRVNYDDLRINYDDLRVNYDDLRVN
                                                                                                                                                                                                               TQGYGYVTEKIIDAYFSHTIPIYQGSPSVAKDFNPKSFVNVHDFKNFDBAIDYIKYLHTH
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CC (including the comblement or fragment), a vector containing the nucleic acid, a host cell containing nucleic acid or vector, an antibody which CC selectively binds to the protein and a gene expression system for CC producing transmembrane segment-free alphal, 3- fucosyltransferase, CC comprising a host cell modified with the nucleic acid or its C producing fucosylated oligosaccharides, such as LacNAc-R and GDP-fucose, CC contacting the protein with a substrate such as LacNAc-R and GDP-fucose, CC and purifying the bost cell with a substrate, to produce oligosaccharides, and purifying the obtained oligosaccharides, or by culturing the cell, cc contacting a caid probe for detecting the nucleic acid, by contacting a sample with a cc mucleic acid is useful contacting a probe for detecting hybridises to alphal, 3-fucosyltransferase CC amplifying the nucleic acid using polymerase chain reaction (PCR). The host cell is useful for producing a transmembrane segment-free alphal, 3-fucosyltransferase fusion protein, by growing the host cell containing a certain protein and isolating the fusion protein. The antibody is useful for detecting the protein in a sample. The presence of the protein in the sample is indicative of infection by Helicobacter pylori or the presence of malignant cells. The antibody is also useful for diagnosing disease, and for inhibiting abnormal alphal, 3-fucosyltransferase gene product activity. The nucleic acid is useful as gart of ribozyme and/or triple helix sequences and for alphal, 3-fucosyltransferase gene product activity. The nucleic acid is useful as gart of ribozyme and/or triple helix sequences and for alphal, 3-fucosyltransferase.
                       fucosyltransferase gene regulation. Oligosaccharides synthesised using the protein or cell are useful in the development of assays to detect mammalian tumours. The present sequence represents an H. pylori alphal, 3 fucosyltransferase encdoed by the fucT gene. (Updated on 29-AUG-2003 to standardise OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            The invention relates a purified transmembrane segment-free alpha 1.3-fucosyltransferase polypeptide, having a repart of the sequence: X 1-X 2-fucu-Arg-X 3-X 4-Tyr, where X 1. X 2 and X 4 is Asp or Asn; and X 3 is Ise, Val or Ala. Also included are the nucleic acid encoding the protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Purified transmembrane segment-free alpha1,3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
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21-OCT-2002
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(first entry)
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Best Local Similarity
Matches 383; Conserv
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                                                                                                                                                                                                                                                                         Enzyme; fucT; alphal,3 fucosyltransferase; oligosaccharide; Lex stex; Helicobacter pylori infection; malignant cell; mammalian
                                                                                                                                                                                                                                                                                                               H. pylori alpha1,3 fucosyltransferase #4.
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21-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                ABG30884;
Example 3; Fig 6; 37pp; English.
                        purified transmembrane segment-free alpha1,3-fucosyltransferase
polypeptide useful for producing fucosylated oligosaccharides.
                                                                                                                                           05-JUN-1998;
                                                                                                                                                                     07-DEC-2000; 2000US-00733524
                                                                                                                                                                                                06-JUN-2002
                                                                                                                                                                                                                        US2002068347-A1
                                                                                                                                                                                                                                                Helicobacter pylori; strain 26695A.
                                                                 WPI; 2002-582480/62.
                                                                                          Taylor DE,
                                                                                                                  (UYAL-) UNIV ALBERTA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RNPDKPADIVFGNPLGSARKILSYQNTKRIFYTGENESPNFNLFDYAIGFDELDFRDRYL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ASPLLELSONTSFKIYRKAYOKPI 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PLASI-----DDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYERLLQN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDENPKEFVNVHDENNFDEAIDYIKYLHTH
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ASPLIELSONTSFKIYRKIYQKSL 442
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PLYSIDNLRINYDNLRVNYDDLRVNYDDLRVNYDDLRINYDDLRINYDDLRINYERLLON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PNAYLDMLYENPLNTLDGKAYFYQNLSFKKILDFFKTILENDTIYH--NHPFIFYRDLNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFMWECDLDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYVRYLHTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RMPLYYDRLHHKAESVNDTTAPYKIKGNSLYTLKKPSHCFKENHPNLCALINNESDPLKR
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(first entry)
                                                                                                                                             98US-00092315
                                                                                                                                                                                                                                                                                                                                                                                                        protein; 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             86.5%; Score 2064.5;
86.3%; Pred. No. 1.16
tive 27; Mismatches
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CC (including tits complement or fragment), a vector containing the nucleic cold, a host cell containing nucleic acid or vector, an antibody which content and a gene expression system for comprising a host cell modified with the nucleic acid or its producing transmembrane segment-free alphal, 3 fucosyltransferase, cc comprising a host cell modified with the nucleic acid or its comparising a host cell modified with the nucleic acid or its comparising a host cell modified with the nucleic acid or its comparising the portion. The protein and cells are useful for contacting the protein with a substrate such as Lex, Ley or alex, by contacting the protein with a substrate, to produce oligosaccharides and purifying the host cell with a substrate, to produce oligosaccharides or and purifying the obtained oligosaccharides. The nucleic acid is useful can a probe for detecting the nucleic acid, by contacting a sample with a nucleic acid probe that hybridises to alphal, 3-fucosyltransferase cell is useful for producing a transmembrane segment-free alphal, 3-fucosyltransferase. The nucleic acid using polymerase chain reaction (PCR). The host cell is useful for producing a transmembrane segment-free alphal, 3-fucosyltransferase gene producing a transmembrane segment-free alphal, 3-fucosyltransferase gene producing a transmembrane segment-free alphal, 3-fucosyltransferase gene product activity. The nucleic acid is useful for detecting the protein in a sample. The presence of the protein in the sample is indicative of infection by Helicobacter pylori or the presence of malignant cells. The antibody is also useful for diagnosing disorders and monitoring disease, and for inhibiting abnormal alphal, 3-fucosyltransferase gene product activity. The nucleic acid is useful as gart of ribozyme and/or triple helix sequence and for alphal, 3-fucosyltransferase gene regulation. Oligosaccharides synthesised using the protein or cell are useful in the development of assays to detect mammalian tumours. The present sequence and for alphal, 3
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fucosyltransferase encdoed standardise OS field)
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Sequence 47.6

DB 5;

Length 476;

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NYDDLRVNYDDLRVNYERLLQNASPLLELSQNTSFKIYRKAYQKPI 437
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                                                                                                                         HPNAYLDMLYENPINALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFMWECDLD
                                                                                                    HPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYH--NNPFIFYRDLH
                                                                                                                                                                        NSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIKYLHT
                                                                                                                                                                                            NSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKYLHT
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84.5%; Pred. No. 3.9e
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419 NYDDLRVNYDDLRVNYDRLLQNASPLLELSQNTTFKIYRKAYQKSL 464
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H. pylori alphal, 3 fucosyltransferase
                                                                                                                       ABG30886 standard; protein; 479 AA
                                  29-AUG-2003
21-OCT-2002
                                                                                      ABG30886;
                                  (revised)
(first entry)
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Enzyme; fucT; aipnai, s incopyrimmers sLex; Helicobacter pylori infection; fucT; alpha1,3 fucosyltransferase; oligosaccharide; Lex; Ley; elicobacter pylori infection; malignant cell; mammalian tumour.

Helicobacter pylori; strain

US2002068347-A1.

Taylor DE, 07-DEC-2000; 2000US-00733524. 06-JUN-2002 (UYAL-) UNIV ALBERTA. ရှ 98US-00092315.

Purified transmembrane segment-free alphal,3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.

WPI; 2002-582480/62.

Example 3; Fig 6; 37pp; English.

RESULT 6
ABG30886
ID ABG3086
ID ABG308
ID ABG308
ID ABG308
ID ABG308
ID ABG308 CC fucosyltransferase polypeptide, having a repeat of the sequence: X 1-X 2-CC Leu-Arg-X 3-X 4-Tyr, where X 1, X 2 and X 4 is Asp or Asn; and X 3 is C including its complement or fragment), a vector containing the protein CC (including its complement or fragment), a vector containing the protein CC acid, a host cell containing nucleic acid or vector, an antibody which CC selectively binds to the protein and a gene expression system for CC producing transmembrane segment-free alphal, 3- fucosyltransferase, CC comprising a host cell modified with the nucleic acid or its comprising the protein with a substrate such as Lex, Ley or sLex, by CC contacting fucosylated oligosaccharides, such as Lex, Ley or sLex, by CC contacting the protein with a substrate such as Lex, Ley or slex, by CC contacting the protein with a substrate, to produce oligosaccharides, or by culturing the cell with a substrate. The nucleic acid is useful as a probe for detecting the nucleic acid, by contacting a sample with a nucleic acid probe that hybridises to alphal, 3- fucosyltransferase gene producing a transmembrane segment-free alphal, 3- fucosyltransferase fucosyltransferase fucosyltransferase gene producing a transmembrane segment-free alphal, 3- fucosyltransferase gene producing a transmembrane segment-free alphal, 3- fucosyltransferase gene product activity. The nucleic acid is useful as cut in a sample. The presence of the protein in the contacting a fucosyltransferase gene product activity. The nucleic acid is useful as gart of ribozyme and/or triple helix sequences and for alphal, 3- fucosyltransferase gene regulation. Oligosaccharides synthesised using the protein or cell are useful in the development of assays to detect cut fucosyltransferase encoded by the fucosyltransferase and for alphal, 3- fucosyltrans The invention relates a purified transmembrane segment-free alpha 1,3-

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                                                                                                                                                                                                                                                                                                                                     06-MAY-2004
   New isolated polynucleotide encoding fucosyltransferase protein, us for synthesizing oligosaccharide moiety on a protein or lipid that
                                           N-PSDB;
                                                                                Johnson
                                                                                                                               23-JUL-2002;
08-NOV-2002;
                                                                                                                                                                    23-JUL-2003; 2003WO-US023057.
                                                                                                                                                                                              29-JAN-2004.
                                                                                                                                                                                                                       WO2004009838-A2
                                                                                                                                                                                                                                               Helicobacter
                                                                                                                                                                                                                                                                     FutA; FutB; alpha 1-3/4 fucosyltransferase; glycoprotein;
fucose; N-acetylglucosamine; glycoconjugate; enzyme.
                                                                                                                                                                                                                                                                                                              Helicobacter
                                                                                                                                                                                                                                                                                                                                                              ADJ77814;
                                                                                                                                                                                                                                                                                                                                                                                      ADJ77814 standard; protein;
                                                                                                         (NEOS-)
                                                       2004-123401/12.
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                                                                                                                               2002US-0398156P.
2002US-0424894P.
                                                                                                                                                                                                                                             pylori
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Best Local Similarity 81.6%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This invention relates to novel isolated polynucleotides and the encoded polypeptides thereof, which are related to the fucosyltransferase enzymes (FutA and FutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycopyroteins and glycolipids with the desired oligosaccharide moieties (i.e. by transfer of a fucose residue to N-acetylglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial fucosyltransferase is unaffected by the sialyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, bacterially expressed enzymes offer a large cost saving relative to mammalian expression systems. This polypeptide sequence is an H. pylori strain 1218 FutB protein sequence of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 485 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 16; SEQ ID NO 6; 72pp; English.
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                                                                                                                    SQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKYLHTH
                                                                                                                                                                                                          GVVSFVASNANAPMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN
                                                                                                                                                                                                                                                                                      RMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKR
                                                                                                                                                                                                                                                                                                                               QNPNEPSDLVFGSPIGSARKILSYQNAKRVFYTGENESPNFNLFDYAIGFDELDFRDRYL
                                                                                                                                                                                                                                                                                                                                                                                                   MFQPLLDAYIESASIEKITSKSPPPLKIAVANWWGDEEVEEFKKNILYFILSQHYTITLH
PNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFMWECDLDE
                                                                                                                                                                                        GFASFVASNPNAPKRNAFYDALNSIEPVIGGGSVKNTLGYNIKNKSEFLSQYKFNLCFEN
                                                                                                                                                                                                                                                              RMPLYYDRLHHKAESVNDTTSPYKLKPDSLYALKKPSHHFKENHPNLCAVVNNESDPLKR
                                                  PNAYLDMLYENPLINTLDGKAYFYQNLSFKKILDFFKTILENDTIYH--DNPFIFYRDLNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 2040.5; DB 8; Pred. No. 1.5e-170;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
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RESULT 8
ADJ27349
ID ADJ2
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XX ADJ2
XX ALph
XX A
                                                                                                                                                                                                                                                                                  alpha-1; 3/4-fucosyltransferase;
fucosyl; fucose.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Alpha-1,3/4-fucosyltransferase
              WO2004009793-A2
                                                                                                                                            Helicobacter pylori;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; Fig 3; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate acceptor substrate on glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI;
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08-NOV-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sequence represents an alpha-1,3/4-fucosyltransferase protein which used in the method of the invention for producing a fucosylated oprotein. The method involves contacting a recombinant
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                                                                                                                              PNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFMWECDLDE
                                                                                                                                                                                   SQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKYLHTH
                                                                                                                                                                                                                                              GVVSFVASNANAPMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN
                                                                                                                                                                                                                                                                                                              RMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKR
                                                                                                                                                                                                                                                                                                                                                            QNPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYL
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YDDLRVNCDDLRVNYDDLRVNYERLLQNASPLLELSQNTTFKIYRKAYQKSL
                                                       PLISIDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVN
                                                                                                                                                                                                                            GFAS FVASNPNAPKRNAFYDALNS I BPVI GGGSVKNTLGYNI KNKSEFLSQYKFNLCFEN
                                                                                                                                                                                                                                                                                    RMPLYYDRLHHKAESVNDTTSPYKLKPDSLYALKKPSHHFKENHPNLCAVVNNESDPLKR
                                                                                                                                                                                                                                                                                                                                          QNPNEPSDLVFGSPIGSARKILSYQNAKRVFYTGENESPNFNLFDYAIGFDELDFRDRYL
                                                                                                                                                                                                                                                                                                                                                                                                    MFOPLLDAYIESASIEKITSKSPPPLKIAVANWWGDEEVEBFKKNILYFILSOHYTITLH
                                                                                                              PNAYLDMLYENPLINTLDGKAYFYONLSFKKILDFFKTILENDTIYH--DNPFIFYRDLNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            fucosylated glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
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2002US-0424894P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TECHNOLOGIES
                                                                                                                                                                    VTEKIIDAYFSHTIPIYWGSPSVAQDFNPKSFVNVCDFKDFDEAIDHVRYLHTH
                 DDLRVNYDDLRVNYERLLQNASPLLELSQNTSFKIYRKAYQKPI
                                                                                                                                                                                                                                                                                                                                                                                                                                                 85.4%; pre
81.6%; pre
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Pred. No. 1.5e
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es 27;
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RESULT 9 AEB70135 ID AEB7

AEB70135

standard; protein;

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Matches 385
                                                                                                                                                                                                                                                                                                                                                                                                                       The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polynucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The prese sequence is Helicobacter pylori fucosyltransferase protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1; SEQ ID NO 6; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Simala-Grant J,
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DB; AEB70134.
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              PLASIDDLRVNYDDLRVNYDDLRVNYDDLRVNY----
                                                            PNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFMWECDLDE
                                                                                                              SQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKBFVNVHDFNNFDEAIDYIKYLHTH
                                                                                                                                                                 GVVSFVASNANAPMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN
                                                                                                                                                                                                             RMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKR
                                                                                                                                                                                                                                                              | QNPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYL
PLISIDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVN
                                                                                                SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAQDFNPKSFVNVCDFKDFDEAIDHVRYLHTH
                                                                                                                                                 GFASFVASNPNAPKRNAFYDALNSIEPVIGGGSVKNTLGYNIKNKSEFLSQYKFNLCFEN
                                                                                                                                                                                                  RMPLYYDRLHHKAESVNDTTSPYKLKPDSLYALKKPSHHFKENHPNLCAVVNNESDPLKR
                                                                                                                                                                                                                                                   QNPNEPSDLVFGSPIGSARKILSYQNAKRVFYTGENESPNFNLFDYAIGFDELDFRDRYL
                                               PNAYLDMLYENPLNTLDGKAYFYQNLSFKKILDFFKTILENDTIYH--DNPFIFYRDLNE
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Pred. No. 1.5e-170;
23; Mismatches 27;
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RESULT 10
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AC ADJ7
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polypeptides thereof, which are related to the fucosyltransferase enzymes (FutA and FutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycopyroteins and glycolipids with the desired oligosaccharide moieties (i.e. by transfer of a fucose residue to N-acetylglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial fucosyltransferase is unaffected by the sialyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, bacterially expressed enzymes offer a large cost saving relative to mammalian expression systems. This polypeptide sequence is an H. pylori strain 1182 FutB protein sequence of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New isolated polynucleotide encoding fucosyltransferase protein, useful for synthesizing oligosaccharide moiety on a protein or lipid that is unglycosylated in its native form or for synthesizing glycolipids.
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08-NOV-2002; 2002US-0424894P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO2004009838-A2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 486 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This invention relates to novel isolated polynucleotides and the encoded
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 16; SEQ ID NO 2; 72pp; English
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DB; ADJ77809.
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e; N-acetylglucosamine; glycoconjugate; enzyme.
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81.2%; Pred. No. 3.
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3.8e-170;
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Query Match

85.3%;

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RESULT 11
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ID ADJ27
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fucosyl;
                                                                             This sequence represents an alpha-1,3/4-fucosyltransferase protein which was used in the method of the invention for producing a fucosylated glycoprotein. The method involves contacting a recombinant fucosyltransferase protein with a mixture comprising a donor substrate which comprises a fucosyl residue, and an acceptor substrate on a glycoprotein, under conditions such that the fucosyltransferase protein catalyzes the transfer of the fucose residue from a donor substrate to catalyzes the transfer on the glycoprotein. The method is useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Alpha-1,3/4-fucosyltransferase
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                                                                                                                                                                                                                                                                                                                                                                                                                     Producing fucosylated glycoprotein, by of fucosyltransferase protein with mixture acceptor substrate on glycoprotein.
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The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various
                                                                                                                                                                                  New isolated fucosyltransferase polynucleotides and polypeptides, for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                                          Simala-Grant J,
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|NYDDLRVNYDDLRVNYERLIQNASPLIEISQNTTFKIYRKAYQKSI 471
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                                                                                                          English
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05-JUN-1998; 07-DEC-2000; 06-JUN-2002 US2002068347-A1 Helicobacter pylori;

98US-00092315

200005-00733524

(UYAL-) UNIV ALBERTA

Enzyme; fucT; alphal, 3 fucosyltransferase; oligosaccharide; Lex; Ley; sLex; Helicobacter pylori infection; malignant cell; mammalian tumour

infection;

Helicobacter pylori

strain 1182

H. pylori alpha1,3 fucosyltransferase

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29-AUG-2003 21-OCT-2002 ABG30882;

(revised)
(first entry)

ABG30882 standard; protein;

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polymucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.
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                                                                                                                                                                                   SQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKYLHTH
                                                                                                                                                                                                                                                                                                                                        RMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                        MFQPLLDAYVESASIEKMASKSPPPLKIAVANWWGDEEIKEFKKSVLYFIFSQRYTIALH
NYDDLRVNYDDLRVNYDDLRVNYERLLQNASPLLELSQNTTFKIYRKAYQKSL 471
                NYDDLRVNYDDLRVNYDDLRVNYERLLQNASPLLELSQNTSFKIYRKAYQKPI 437
                                                                                                                                            PNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFMWECDLDE
                                                                                                                                                                                                                                                  GFASFVASNPNAPKRNAFYDVLNSIEPVIGGGSVKNTLGYNIKNKSEFLSQYKFNLCFEN
                                                                                                                                                                                                                                                                                                                                                                                                      QNPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYL
                                                                                            PLASI -----
                                                                                                                                                                                                                                                                         GVVSFVASNANAFMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN
                                                                                                                                                                                                                                                                                                                RMPLYYDRLHHKAESVNDTTSPYKLKPDSLYALKKPSHHFKENHPNLCAVVNNESDPLKR
                                                                                                                                                                                                                                                                                                                                                                             QNPNEPSDLVFGSPIGSARKILSYQNAKRVFYTGENESPNFNLFDYAIGFDELDFRDRYL
                                                                                                                                                                                                                                                                                                                                                                                                                                         MFQPLLDAYIBSASIEKITSKSPPPLKIAVANWWGDEEVEEFKKNILYFILSQHYTITLH
                                                           PLISIDDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRV
                                                                                                                         PNAYLDMLYENPLNTLDGKAYFYQNLSFKKILDFFKTILENDTIYH--DNPFIFYRDLNE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   85.3%; Score 2036; DB 9;
81.2%; Pred. No. 3.8e-170;
tive 23; Mismatches 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length
                                                                               -DDLRVNYDDLRVNYDDLRV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                               418
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                                                                                                                                                                                                                                                                                                                                                                             120
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WPI; 2002-582480/62

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Ce enzymatically active portion. The protein and cells are useful for contacting fucosylated oligosaccharides, such as Lex, Ley or sLex, by CC contacting the protein with a substrate such as LacNAc-R and GPP-fucose, CC and purifying the produced oligosaccharides. The nucleic acid is useful cell, CC contacting the host cell with a substrate, to produce oligosaccharides and purifying the produced oligosaccharides. The nucleic acid is useful cell as a probe for detecting the nucleic acid, by contacting a sample with a nucleic acid probe that hybridises to alphal,3-fucosyltransferase cell is useful for producing a transmembrane segment-free alphal,3-fucosyltransferase-fusion protein, by growing the host cell containing a vector operably linked to a polynucleotide encoding a desired polypeptide or peptide under conditions which allow expression and secretion of the fusion protein and isolating the fusion protein. The antibody is also useful for diagnosing disease, and for inhibiting abnormal alphal,3-cc fucosyltransferase gene product activity. The nucleic acid is useful as part of ribozyme and/or triple helix sequences and for alphal,3-cc fucosyltransferase gene product activity. The nucleic acid is useful as part of ribozyme and/or triple helix sequences and for alphal,3-cc fucosyltransferase gene regulation. Oligosaccharides synthesised using the protein or cell are useful in the development of assays to detect fucosyltransferase encoded by the fuco gene. (Updated on 29-AUG-2003 to standardise of Sfield)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                acid, a host cell containing nucleic acid or vector, an antibody which selectively binds to the protein and a gene expression system for producing transmentane segment-free alphal, 3- fucosyltransferase, comprising a host cell modified with the nucleic acid or its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           fucosyltransferase polypeptide, having a repeat of the sequence: X_1-X_2-Leu-Arg-X_3-X_4-Tyr, where X_1, X_2 and X_4 is Asp or Asn; and X_3 is Ile, Val or Ala. Also included are the nucleic acid encoding the protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Purified transmembrane segment-free alphal,3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        The invention relates a purified transmembrane segment-free alpha 1,3-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               standardise OS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               RMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKR 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ONPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MFQPLLDAYIESASIEKITSKSPPPLKIAVANWWGDEEVEEFKKNILYFILSQHYTITLH
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                                                             PNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFMWECDLDE
                                                                                                                                   SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAQDFNFKSFVNVCDFKDFDEAIDHVRYLHTH
                                                                                                                                                                              SQGYGYVTEKILDAYFSHTIPIYWGSPSVAKOFNPKEFVNVHDFNNFDEAIDYIKYLHTH
                                                                                                                                                                                                                                                                                                                     GVVSFVASNANAPMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN
                                                                                                                                                                                                                                                                                                                                                                                                                    RMPLYYDRLHHKAESVNDTTSPYKLKPDSLYALKKPSHHFKENHPNLCAVVNNESDPLKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ONPNEPSDLVFGSPIGSARKILSYONAKRVFYTGENESPNFNLFDYAIGFDELDFRDRYL
                                                                                                                                                                                                                                                                                 GFASFVASNPNAPKRNAFYDVLNS I EPVI GGGSVKNTLGYN I KNKSEFLSQYKFNLCFEN
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81.2%; Pred. No. 2.9e-169;
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HONPNEFSDLVFSNPLGAARKILSYONTKRVFYTGENESPNFNLFDYAIGFDELDFNDRY

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RESULT 14
ADJ77820
ID ADJ777
AC ADJ7
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                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                     Query Match
Best Local
                                                                                                                                                                                                                                                                                                                                                                              polypeptides thereof, which are related to the fucosyltransferase enzymes (PutA and PutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycoproteins and glycolipids with the desired oligosaccharide moieties (i.e. by transfer of a fucose residue to N-acetylglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial fucosyltransferase is unaffected by the sialyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, bacterially expressed enzymes offer a large cost saving relative to mammalian expression systems. This polypeptide sequence is an H. pylori strain 26695 FutA protein sequence of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New isolated polymucleotide encoding fucosyltransferase protein, us for synthesizing oligosaccharide moiety on a protein or lipid that unglycosylated in its native form or for synthesizing glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Helicobacter pylori
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Helicobacter pylori strain 26695 FutA protein SeqID
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23-JUL-2002; 2002US-0398156P.
08-NOV-2002; 2002US-0424894P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PutA; FutB; alpha 1-3/4 fucosyltransferase; glycoprotein;
fucose; N-acetylglucosamine; glycoconjugate; enzyme.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 12; SEQ ID NO 12; 72pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            23-JUL-2003; 2003WO-US023057.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO2004009838-A2
                                                                                                                                                                                                                                                                                                                           Sequence 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This invention relates to novel isolated polynucleotides and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Johnson
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (NEOS-) NEOSE TECHNOLOGIES
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2004-123401/12.
                                                                                                                                                                                                           376;
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                                                                                                                                                                                                                                        Similarity
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HQNPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRY 119
                                                                                                                  PLISIODDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRV
                                                                                     MFQPLLDAFIESASIEKWASKSPPPPLKIAVANWWGDEEIKEFKKSVLYFILSQRYAITL
                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                    A,
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                                                                                                                                                                                                                                     82.6%;
                                                                                                                                                                                                     Score 1972.5;
Pred. No. 1.2e.
9; Mismatches
                                                                                                                                                                                                        9;
                                                                                                                                                                                                        .5; DB 8;
1.2e-164;
hes 24;
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                                                                                                                                                                                                                  Indels
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RESULT 15
ADJ27355
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AC ADJ27
XX ADJ27
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XX Alpha
XX Alpha
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PR 23-JU
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                                                 This sequence represents an alpha-1,3/4-fucosyltransferase protein which was used in the method of the invention for producing a fucosylated glycoprotein. The method involves contacting a recombinant fucosyltransferase protein with a mixture comprising a donor substrate which comprises a fucosyl residue, and an acceptor substrate on a glycoprotein, under conditions such that the fucosyltransferase protein catalyzes the transfer of the fucose residue from a donor substrate to the acceptor substrate on the glycoprotein. The method is useful for
                                                                                                                                                                                                                                                                                                                                            Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate acceptor substrate on glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23-JUL-2002;
08-NOV-2002;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     alpha-1; 3/4-fucosyltransferase; glycoprotein; fucosyltransferase;
fucosyl; fucose.
                                                                                                                                                                                                                                                                                        Example 1; Fig 6; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-JUL-2003; 2003WO-US023155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO2004009793-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Helicobacter pylori;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alpha-1,3/4-fucosyltransferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     20-MAY-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Johnson
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Search completed: August 11, 2006, Job time : 118.648 secs 19:36:48

Copyright

GenCore version (c) 1993 - 2006

5.1.9 Biocceleration

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G.Species: Helicobacter pylori

G.Species: Helicobacter pylori

G.Accession: C64601

R.Tomb, J.F.; White, O.; Kerlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleis Peterson, S.; Loftus, B.; Richardson, D.; Dodson, R.A.; Khalak, H.G.; Glodek, Son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fleis, Son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fleis, Son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fleis, Son, J.D.; Son, S.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O. A; Authors: Wallin, B.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O. A; Reference number: A64520; MUID:97394467; PMID:9252185
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                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 394;
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Best Local (
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121.23
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 392 NYDDLRVNYDDLRVNYERLLQNASPLLELSQNTSFKIYRKAYQKPI 437
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                         HPNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFMWECDLD 359
                                                                                                                                             NSQGYGYYTEKILDAYFSHTIPIYWGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKYLHT 299
                                                                                                                                                                                                                     RGVVSFVASNANAPMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFE 239
                                                                                                                                                                                                                                                                                LRMPLYYDRLHHKABSVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLK 179
                                                                                                                                                                                                                                                                                                                                          HQNPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRY 119
                                                                                                                                                                                                                                                                                                                                                                                  HPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYH--NNPFIFYRDLH
                                                                                                                                                                                                         RGFASFVASNANAPMRNAFYDALNSIEPVTGGGSVRNTLGYKVGNKSEFLSQYKFNLCFE
                                                                                                                                                                                                                                                                                                                         HONPNESSDLVFSNPLGAARKILSYONTKRVFYTGENESPNFNLFDYAIGFDELDFNDRY
                                                                                                                                                                                                                                                                   LRMPLYYAHLHYEAELVNDTTAPYKLKDNSLYALKKPSHHFKENHPNLCAVVNDESDLLK
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2216
1712
2216
1128
1129
1129
960
960
1127
1306
2339
2339
2339
2339
2334
361
                                                                                                                                                                                                                                                                                                                                                                                                                                                         86.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                           2%; Score 2058.5; DB 2;
5%; Pred. No. 8.5e-130;
13; Mismatches 28;
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E71604
I39048
G90085
AH1879
A36669
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C71618
T18472
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I40631
A45156
S72284
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non-proteolytic bo
alpha-(1,3)-fucosy
DNA-directed RNA p
ORF MSV156 hypothe
ORF MSV152 probabl
DNA-directed RNA p
hypothetical prote
alpha (1,3) fucosy
hypothetical prote
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Helicobacter pylori

shown

H.O.; Fraser,

C.

n, G.G.; Fleischmann, R.D.; H.G.; Glodek, A.; McKenney .; Bowman, C.; Watthey, L.

prote

476;

31;

Gaps

240

180

120

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RiTomb, J.F.; White, O.; Kerlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, R.D. Peterson, S.; Loftus, B.; Richardson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McKenne son, J.D.; Kelley, J.M.; Gotton, M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey, L. Nature 388, 539-547, 1997

A;Authbors: Wallin, E.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser, C. A;Title: The complete genome sequence of the gastric pathogen Helicobacter pylori. A;Reference number: A64520; MUID:97394467; PMID:9252185

A;Accession: C64567
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C64567
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A;Cross-references: UNIPROT:025142; UNIPARC:UPI00000D70CA; GB:AE000554; GB:AE000511;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Date: 09-Aug-1997 #sequence_revision 09-Aug-1997 #text_change 09-Jul-2004
C;Accession: C64567
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A; Reference number: A71800; A; Accession: B71914
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Matches 376
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | LRMPLYYDRLHHKABSVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLK 179
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MFQPLLDAYVESASIEKMASKS-PPPLKIAVANWWGDEEIKEFKKSVLYFIFSQRYTIAL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RGVVSFVASNANAPMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFE 239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LRMPLYYAHLHYKAELVNDTTAPYKLKDNSLYALKKPSHHFKENHPNLCAVVNDESDLLK 180
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                                                                                                                                                                                                                                                                                                                      EPLASIDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYERLLQNASPLLE 419
                                                                                                                                                                                                                                                                                                                                                                                                             NSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIKYLHT
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Pred. No. 3.9e-1
9; Mismatches
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                                                           E.D.; Doig, P.C.; Smith, Q.; Taylor, D.E.; Vovis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                425;
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A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-454 <ARN>
A;Cross-references: UNIPROT:Q9ZLI3; UNIPARC:UPI00000D3665; GB:AE001491; GB:AE001439; NID:
A;Experimental source: strain J99
C;Genetics:
A;Gene: fucT
                                                                                                                                                                                                                                                                                                                                         alpha-(1,3)-fucosyltransferase - Helicobacter pylori (strain J99)
C;Species: Helicobacter pylori
A;Variety: strain J99
C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004
C;Accession: G71862
C;Accession: G71862
C;Accession: Ling, Lis.L.; Moir, D.T.; King, B.L.; Brown, E.D.; Doig, P.C.; Smith, Ives, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; Vovis, C, Nature 397, 176-180, 1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
G71862
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A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-436 <ARN>
A;Cross-references: UNIPROT:09ZKD7; UNIPARC:UPI00000D36D2; GB:AE001528; GB:AE001439;
A;Experimental source: strain J99
                                                                                                                                                                                                                                                                                 A; Title: Genomic sequence comparison of two unrelated isolates A; Reference number: A71800; MUID:99120557; PMID:9923682 A; Accession: G71862
                                                                                                             Query Match
Best Local S
Matches 365
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                                                   1 MFQPLLDAYVESASIEKMAS--KSPPPLKIAVANWWGDEEIKEFKKSVLYFIFSQRYTIA 58
                                                                                                           h 80.3%; Score 1917; DB 2; Length 436;
Similarity 83.1%; Pred. No. 2e-120;
65; Conservative 20; Mismatches 34; Indels 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LHQNPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDR 118
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LHQNPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDR 118
                                   QNASPLLELSQNTTFKIYRKAYQKSL 442
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nilarity 83.2%;
Conservative 2
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; Pred. No. 3.2e-123;
25; Mismatches 37;
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R;Yamasaki, S.; Shimizu, T.; Hoshino, K.; Ho, S.T.; Shimada, T.; Nair, G.B.; Takeda, T. Gene 237, 321-332, 1999
A;Title: The genes responsible for O-antigen synthesis of Vibrio cholerae 0139 are close A;Reference number: Z22749; MUID:99453293; PMID:10521656
A;Accession: T44327
A;Accession: T44327
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A;Experimental source: strain O22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein wbfL [imported] - Vibrio cholerae
C;Species: Vibrio cholerae
C;Decies: Vibrio cholerae
C;Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004
C;Accession: T44327
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Best Local Similarity
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ILAFFKTILE 340
                                                                                                                                       YPSYKGM-VEHKKPIMAQYKFSICYENAKDIPGYITEKIFDSFFAGCVPVYWGANNVT-D
                                                                                                                                                               VKNTLGYNVKNKSEFLSQYKFNLCFENSQGY-GYVTEKILDAYFSHTIFIYWGSFSVAKD
                                                                                                                                                                                                                            GWDKYRF--TGPILIRAMN---
                                                                                                                                                                                                                                                                        KKPSHQFKENHPNLCAVVNDESDPLKRGVVSFVASNANAPMRNAFYDALNSIEPVTGGGS
                                                                                                                                                                                                                                                                                                                       G-NKKPKTTLDPALFSLDLYNEREKAIR---WPEKNH-
                                                                                                                                                                                                                                                                                                                                                            GENEVPNENLFDYAIGFDELDFRDRYLRMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTL
                                                                                                                                                                                                                                                                                                                                                                                                                WSDDLVDGVKYIKLNY-----AHAFPN------CIEKNLTNKKALCVLIA 145
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                                                                                                                                                                                                                                                                                                                                                                                                                                                        WGDEEIKEFKKSVLYFIFSQRYTIALHQNPNBFSDLVFSNPLGSARKILSYQNAKRVFYT
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                                            FIPENTFIDKRNFSNYB---DLYLYLKNMPDGEYLKYL-ENIENYLNSB----OSLOFKS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ELSQNTTFKIYRKAYQKSL 421
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8.1%; Score 193; DB 2;
24.8%; Pred. No. 1.2e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches 100;
                                                                                                                                                                                                                              ----LPQLAQKILGRS
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                                                                                 probable fucosyltransferase [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Becies: Arabidopsis thaliana (mouse-ear cress)
C;Becies: O2-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 09-Jul-2004
C;Accession: 995533
R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conm, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.;
Ansen, N.F.; Hughes, B.; Huizar, L.
Nature 408, 816-820, 2000
Nature 408, 816-820, 2000
Nature 408, 816-820, 2000
A;Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.:
C.A.; Li, J.H.; Li, Y.; Liu, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali, C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali, R.; M.; Rooney, T.; Rowley, D.; Sakano, H.
A;Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, I ker, M.; D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A;Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A;Reference number: A86141; MUID:21016719; PMID:11130712
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R;Lawson, D.; Bowman, S.; Barrell, I
submitted to the EMBL Data Library,
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T18497
hypothetical protein C0780w - malaria parasite (Plasmodium falciparum)
C;Species: Plasmodium falciparum
C;Species: 15-Ctt-1999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
  A;Cross-references: UNIPROT:Q9FX97; UNIPARC:UPI000000BD87; GB:AE005173; NID:g10120428;
                       A; Molecule type: DNA
A; Residues: 1-513 <STO>
                                                                   A; Status: preliminary
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A;Molecule type: DNA
A;Residues: 1-2657 <LAW>
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A;Accession: T18497
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NHLNVCCIDKNGNTDDYSEHVLFAEVLELREYVPEKLVHSTYNKEKVKSYLFVLTR----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EDLFLEHON----IYKK 317
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ORF MSV145 hypothetical protein - Melanoplus sanguinipes entomopoxvirus (;Species: Melanoplus sanguinipes entomopoxvirus C;Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004 C;Accession: T28306
R;Afonso, C.L.; Tulman, E.R.; Lu, Z.; Oma, E.; Kutish, G.F.; Rock, D.L.
J. Virol. 73, 533-552, 1999
A;Title: The genome of Melanoplus sanguinipes entomopoxvirus.
A;Reference number: Z20484; MUID:99102612; PMID:9847359
A;Accession: T28306
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-525 <AFO>
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A; Map position: :
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nes 53; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          h 6.0%; Score 144; DB 2; Length 525;
Similarity 19.3%; Pred. No. 0.04;
07; Conservative 76; Mismatches 176; Indels 194;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DKISKNYKLIIHNLL----RQIMNSTDLKEYI----NNIINIDNYKNLSDYIIN-----KFW 105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   QNPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNF----NLFDYAIGFDELDFR 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MFQPLLDAYVESASIEKMASKSPPPLKIAVANWWGDEEIKEFKKSVLYFIFSQRYTIALH
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                                                                                                                   NGFVTHNIIIWTYLFGYKILRODLLKELFAIIKNIPIELSGIISDLLINKNYIAIDEILN
                                                                                                                                                                                                                                                                                         VTGGGSVKNTLGYNVKNKSEFLSQ---YKFNLCFENSQGYGYVTEKILDAYFS-----
                                                                                                                                                                                                                                                                                                                                                         LAISILTNDDAEIDITFDNLLEIINND-----RSIFSYINTN------YYPLFKS---
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DRYLRMP-----SPYKLKD 147
      HDE--PKITYEIGQINVTSENVYNNYINVIESIAKKPFEPKGYFYNFDVDINKLKFNKKF
                                                         FDEAIDYIKYLHTHPNAYLDMLYENPLNALDG------KAYFYQ-DLSFKKI----LAF
                                                                                                                                                                               ----HTIPIY---WGSPSVAKDFNP----
                                                                                                                                                                                                                                         -SLK-TIEYKFKVSDSNLDPGYLWKSRESFENLKNDGY-AKNFNDVFFSILYSYIR
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C;Species: Mycoplasma pulmonis
C;Date: 24-May-2001 #sequence_revision 24-May-2001 #text_change 09-Jul-2004
C;Accession: G90587
R;Chambaud, I; Heilig, R.; Ferris, S.; Barbe, V.; Samson, D.; Galisson, F.; Moszer, I.;
Rucleic Acids Res. 29, 2145-2153, 2001
A;Title: The complete genome sequence of the murine respiratory pathogen Mycoplasma pulmc A;Reference number: A99512; MUID:21267165; PMID:11353084
A;Accession: G90587
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A; Residues: 1-789 < KUR>
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Local Similarity 21.4%; Pred. No. 0.087;
Les 107; Conservative 76; Mismatches 174.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   YDSKVILLTSENPSSINSKDFKNNLNKAKKIEVFLKEKN-YLNNENKLSSYSLKAMDFYY 194
            FAYNOVIOL-IKSIHPSLKP
                                                                                                                                                                                                                                                                                                                                                                                                             LHTHPNAYLDMLYENPLNALDGKA---YFYQDLSFK------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F-KENHPNLCAVVNDESDPLKRGVVSFVASNANAPMRNAFYDALNSIEPVTGGGSVKNTL 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SLMRDXLSDLSIRKDMNISLKNNEINRK-WNLKNKLSLYKINDEDLFDKNNYDNQKNSIT
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                                                                                                                         DDQNNILKSKNFEKIKKNLNHLLDNF----INQNNIKGNFEWQI----PVYEKAINQEKY
                                                                                                                                                                            DDLR-----VNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYERLLQNASPLLELSQN-TSF 426
                                                                                                                                                                                                                                            HSYANDMILIFGKUNQTUNYNKLYDAYYHLUSFTSFLKKESIUB---NIIDQREKFYLFK
                                                                                                                                                                                                                                                                                                                                                            WKIIPESTSNNFNENFKKLIYGDLNLNYFYNDLSFEFRNNLSNLINYFALNFISKNKTYW
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                                                                  KIYRKAYOKPIKNPYPYCAP
                                                                                                                                                                                                                                                                                   -----KILAFFKTILEN-----DTIYHKSS-TSFMWECDLDEPLASIDDLRVNY----
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alpha-(1,3)-fucosyltransferase homolog RC1059 [imported] - Rickettsia conorii C;Specites: Rickettsia conorii C;Specites: Rickettsia conorii C;Date: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 09-Jul-2004 C;Accession: C97832 R;Ogata, H.; Audic, S.; Renesto-Audiffren, P.; Fournier, P.E.; Barbe, V.; Sams Science 293, 2003-2098, 2001 R;Title: Mechanisms of Evolution in Rickettsia conorii and Rickettsia prowazek A;Reference number: A97700; MUID:21442074; PMID:11557893
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A;Title: Complex polymorphisms in an 330 kDa protein A;Reference number: Z16556; MUID:98054002; PMID:93938
A;Accession: T09079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   probable chloroquine resistance protein CG2 (strain 7G8) - malaria parasite C;Species: Plasmodium falciparum C;Date: 13-Aug-1999 #sequence_revision 13-Aug-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Status: translated from GB/EMBL/DDBJ
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96; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                   HKSSTS----FMWECDLDEPLASIDDL----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FLPTVLYNLFEFLRTLGVWLTLLGRLKNDYTDINLRNDRNIC-NVFQYITAKKNSKSWDN 1940
                                                                                                                                                                                                                                                                                 EEDAWFYCLQKKKKINGDDNKMNGDNKMNGDNKMNGDNKMNGDNKMNGDNKMNG 2298
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                                                                                                                                                                                                                                                                                                                 ----RVNYDDLRVNYD-----
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19.5%; Pred. No. 0.45;
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54002; PMID:9393853
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A;Cross-references: UNIPROT:Q11127; UNIPARC:UPI0000004039; GB:U33457; NID:g1039426; C;Superfamily: galactoside 3(4)-L-fucosyltransferase C;Keywords: glycosyltransferase; hexosyltransferase
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A57596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alpha-1,3-fucosyltransferase Fuc-TIV (EC 2.4.1.-) - mouse
N,Alternate names: ELAM-1 ligand fucosyltransferase homolog
C,Species: Mus museulus (house mouse)
C,Date: 08-Feb_1996 #sequence_revision 08-Feb-1996 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Status: preliminary
A;Molecule type: DNA
A;Molecule type: DNA
A;Residuse: 1-183 < KUR>
A;Cross-references: UNIPROT:Q92GR3; UNIPARC:UPI00000CBFA7; GB:AB006914; PIDN:AAL03597.1;
C;Genetics:
C;Genetics:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           R;Gersten, K.M.; Natsuka, S.; Trinchera, J. Biol. Chem. 270, 25047-25056, 1995
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                                                                                                                                                                                                                                                                                                                                                                                                                                          23 PPPLKIAVANWWGDEEIKEFKKSVLYFIFSORYTIALHONPNEFSDLVFSNPLGSARKIL 82
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Similarity
LAGAVPVVLG-PDRANYERFVPRGAFIHVDDFPNAASLAAYLLFLDRNVAVY
                                             FSHTIPIYWGSPSVA--KDFNPK-EFVNVHDFNNFDEAIDYIKYLHTHPNAY 304
                                                                                                                                                                                                                                              YKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKRGVVSFVASNANA-PMRNAFYDA 201
                                                                                                                                                                                                                                                                                                 NFES-----PSHTPGL
                                                                                                                                                                                                                                                                                                                                            SYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYYDRLHHKAESVNDTTSP 142
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                                                                                             LSRHVSVDVFGRTGPGRPVPAIGL-----LHTVARYKFYLAFENSRHVDYITEKLWRNAF 334
                                                                                                                                                LNSIEPV----
                                                                                                                                                                                                Y----GFLYSRSDPTEQPSGLGPQLAR-----KRGLVAWVVSNWNEHQARVRYYHQ 279
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25.0%; Pred. No. 0.046;
tive 40; Mismatches 1
                                                                                                                                           TGGGSVKNTLGYNVKNKSEFLSQYKFNLCFENSQGYGYVTEKI-LDAY 255
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               67;
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protein C0415c - malaria parasite (Plasmodium falciparum)

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C;Species: Plasmodium falciparum
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
C;Accession: T18438
R;Lawson, D.; Bowman, S.; Barrell, B.
submitted to the RMBL Data Library, August 1997
A;Reference number: Z18935
A;Accession: T18438
A;Atctus: preliminary; translated from GB/EMBL/DDBJ
A,Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                          RESULT 14
T09080
                                                                                                                                                                  R;Su, X.Z.; Kirkman, L.A.; Fujioka, H.; Wellems, T.E. Cell 91, 593-603, 1997
A;Title: Complex polymorphisms in an 330 kDa protein are A;Reference number: Z16556; MUID:98054002; PMID:9393853
A;Accession: T09080
                                                                                             A;Molecule type: DNA
A;Residues: 1-2819 <SUX>
A;Cross-references: UNIPROT:015792; UNIPARC:UPI0000785E5; EMBL:AF030693; NID:g2642515;
                                                                                                                                                                                                                                                     probable chloroquine resistance protein CG2 (strain HB3) - malaria parasite C;Species: Plasmodium falciparum C;Date: 13-Aug-1999 #sequence_revision 13-Aug-1999 #text_change 09-Jul-2004 C;Accession: T09080
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A; Note: C0415c
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C; Genetics:
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A; Residues: 1-1532 <LAW>
                               C; Keywords: toxin
                                                                                 A; Experimental source: strain HB3;
                                                                                                                                                  A;Status: translated from GB/EMBL/DDBJ
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Best Local S
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Query Match
                                                                   ;Genetics:
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Local Similarity 21.0%;
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                                 resistance
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5.7%;
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Score 135;
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A;Description: The complete sequence of Ureaplasma urealyticum: A;Reference number: A82870
A;Accession: H82943
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R;Glass, J.I.; Lefkowitz, E.J.; Glass, J.S.; Heiner, C.R.; Chen, E.Y.; Cassell,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical protein UU030 [imported] - Ureaplasma urealyticum C;Species: Ureaplasma urealyticum C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change
                                                                                                                                                                                                                                                                                                                                                                                                      A; Genetic code: SGC3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: UNIPARC:UPI000013913A;
A;Experimental source: serovar 3; biovar 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: DNA
A; Residues: 1-747 < GLA>
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                                                                                                                                                                                                                                                                                                                                                                                                                           A;Gene: UU030
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Best Local
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                                                                                                                                                                                                                       EKILDKN----DYBILNWAANDNDGTLGINIYIKTTKQS--YLINTKPVFLTDKQN-NYL
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-----KPSHQFKENHPNLCAVVNDESDPLKRGVVSFVASNANAPMRNAFY---DALN
                                          IGYSEFGSDVQKRLENAFKIRYDEQNIYQINSPQILAKETKTLTSYIDKKTNNNYSINIE 261
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y 20.7%; Pred. No. ...
y -ive 77; Mismatches ...-IK
                                                                                    ----FRDRYLRMPLY-YDRLHHKAESVNDTTSPYKLKDNSLYTLK--
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2; Mismatches
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Pred. No. 0.28;
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Search	Дb	Ş	DЬ	Ş	DЪ	Ş	DЪ	Ş	DЬ
Search completed: August 11, 2006, 19:45:57	488KYYNITNQNFINRAWYIPQLSANGIKIN-ENLRTWYQINQEDIK 530	336 KTILENDTIYHKSSTSFMWECDLDEPLASIDDLRVNYDDLRVNYDDLRVNYDDLR 390	439 LENNAGFISSNIYEDKDRYQYL-LWGTAPLKSPVSNKYNSLSGISFSNLA 487	282 HDENNFDEAIDYIKYLHTHPNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFF 335	381 NSGTGWIVDRIIDDSLPKNKIKLLIATNNHYMGWSNLAISKDNRMKSRWFNKQEYINY 438	241 SQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKEFVNV 281	321 KLEFILETYNKKTKQTVYLSANFNQKNSGLLKNEDYFQYIFDRTISLDLLTTKDGKNVEL 380	204 SIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN 240	: : : : : : : : : 320

Protein Sequence Searches - February 2005

All of the sequence databases on ABSS have recently been updated.

- Please note that the curators of the UniProt database have purged some temporary accession numbers from the most recent version of UniProt. These sequences have been assigned new permanent accession numbers. The new UniProt record may not contain the previous temporary accession number.
- If you encounter an accession number from an older search run against UniProt (results file extension .rup) that can no longer be found in the database, the permanent record with the new accession number can be found by searching the old accession number in the UniProt Protein Archive database (UniPARC) at:

http://www.pir.uniprot.org/database/archive.shtml

If you have any questions regarding this information or your results, please contact any STIC searcher.

When submitting sequence search results for scanning into IFW, please include a copy of this attachment to assist any future Examiners or members of the public who may encounter UniProt temporary accession numbers.

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NCBI_TaxID=210;
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O32631
Q51986
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GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                                                                                                                         Total number of hits satisfying chosen parameters:
                                                                                                           2849598 seqs, 925015592 residues
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025142 HELPY
025142 HELPY
0920713 HELPY
092073 HELPY
0926313 HELPY
025131 HELPY
02131 HELPY
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054BH9_DICDI
054B56_DICDI
06A1D9_CICOSA
050G3_MIMIV
086NAB_CIOIN
081297_PIARY7
055ARB_DICDI
06A1R3_CIOSA
087135_VIBCH
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08/1501 PHYPA
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034231 VIBCH
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054P60 DICDI
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                         - protein search, using sw model
                                      August 11, 2006, 19:30:58
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2: uniprot_trembl:*
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        Q34G3 mus musculu

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        2 Q3KQ2E XENLAA
        Q5599
        populus alae

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        155
        6.5
        349
        2 Q3KQ2E XENLAA
        Q78ZU7 Xenopus lae

        44
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        2 Q6A1G3 XENTRA
        Q6a1g3
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ALIGNMENTS

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Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=NCTC 11639;
MEDLINE=97407925; PubMed=9261149; DOI=10.1074/jbc.272.34.21357;
Ge Z., Chan N.W.C., Palcic M.M., Taylor D.B.;
"Cloning and heterologous expression of an alphal,3-fucosyltransferase gene from the gastric pathogen Helicobacter pylori.";
J. Biol. Chem. 272:21357-21363(1997).
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl.
GO; GO:0016486; P:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco trans 10.
PANTHER; PTHR1929; Glyco-trans 10.
Glycosyltransferase; Transferase.
SEQUENCE 478 AA; 56070 MW; ACD47A9C7D2D3266 CRC64;
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84.7%; Pred. No. 1.1e-127;
ive 15; Mismatches 26;
                                                         01-JAN-1998, integrated into UniProtKB/TrEMBL. 01-JAN-1998, sequence version 1. 07-PEB-2006, entry version 26. Allphal, 3-fucosyltransferase. Name-fuct;
   478 AA
   PRT;
PRELIMINARY;
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Matches 394; Conservative
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NUCLEOTIDE SEQUENCE.
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NCBI_TaxID=210;
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                301 KNAYLDMLYENPLNTLDGKAYFYQNLSFKKILAFFKTILENDTIYH--DNPFIFCRDLNE 358
300
                                                      301 PNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFMWECDLDE 360
                                                                                                            PLVTIDDLRVNYDDLRVNYDDLRINYDDLRVNYDDLRINYDDLRVNYDDLRVNYDDLRIN 418
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0016757; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IPR011503; Glyco_trans 10.
InterPro; IPR011503; Glyco_trans 10; 1.
Complete proteome; Glycosyltransferase; Transferase.
SEQUENCE 476 AA; 55927 MW; 32BFFDBBD36BIF74 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms
Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MPQPLLDAYVESASIEKMASKS-PPPLKIAVANWWGDEEIKEFKKSVLYFIFSQRYTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MFQPLLDAFIESASIEKMVSKSPPPPLKIAVANWWGDEBIKBFKKSVLYFILSQRYAITL
                                                                                                                                                                                                                                                                                                                                                                                                                                  NUCLECATIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
STRAIN=26695 / ATCC 700392;
STRAIN=2739467; PubMed=9252185; DOI=10.1038/41483;
Tomb J.-F., White O., Kerlavage A.R., Clayton R.A., Sutton G.G., Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S.R., Dougherty B.A., Nelson K.B., Quackenbush J., Zhou L., Kirkness B.F., Peterson S.N., Loftus B.J., Richardson D.L., Dodson R.J., Khalak H.G., Glodek A., McKenney K., FitzGerald L.M., Lee N., Adams M.D., Hickey B.K., Berg D.B., Gocayne J.D., Utterback T.R., Peterson J.D., Watthey J.M., Cotton M.D., Weidman J.F., Fujil C., Bowman C., Watthey L., Wallin B., Wenser G.M., Venter J.C.; Sorgin P.D.,
SOGYGYVŢEKILDAYFSHTIPIYWGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKYLHTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31; Gaps
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "The complete genome sequence of the gastric pathogen Helicobacter pylori.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             86.2%; Score 2058.5; DB 2; Length 476; 84.5%; Pred. No. 2.4e-126; ive 13; Mismatches 28; Indels 31;
                                                                                                                                                                    YDDLRVNYDDLRVNYERLLQNASPLLELSQNTSFKIYRKAYQKPI 437
                                                                                                                                                                                   YDDLRVNYDDLRVNYERLLSKATPLLELSONTTSKIYRKAYOKSL 463
                                                                                                                                                                                                                                                                                              01-JAN-1998, integrated into UniProtKB/TrEMBL
01-JAN-1998, sequence version 1.
07-FEB-2006; entry version 25.
                                                                                                                                                                                                                                                                                                                                      Fucosyltransferase.
OrderedLocusNames=HP0651; ORFNames=HP_0651;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AE000511; AAD07710.1; -; Genomic_DNA PIR; C64601; C64601.
                                                                                                                                                                                                                                                                   PRT;
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025366;
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Distributed under the Creative Commons Attribution-NoDerivs License
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STRAIN=26655 / ATCC 700392;

STRAIN=97394467; PubMed=9252185; DOI=10.1038/41483;

Tomb J.-F., White O., Kertchum K.A., Klenk H.-P., Gill S.R.,

Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S.R.,

Bougherty B.A., Nelson K.B., Quackenbush J., Zhou L., Kirkness B.F.,

Peterson S.N., Loftus B.J., Richardson D.L., Dodgon R.J., Khalak H.G.,

Glodek A., McKenney K., FitzGerald L.M., Lee N., Adams M.D.,

Hickey B.K., Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D.,

Kalley J.M., Cotton M.D., Weidman J.F., Fujil C., Bowman C.,

Watthey L., Wallin B., Hayes W.S., Borodovsky M., Karp D.D.,

Smith H.O., Frager C.M., Venter J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RGVVSFVASNANAPMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFE
                                                                                                                                                                                                                                                                                                                                                                                                      241 NSQCYGYVTEKILDAYFSHTIDIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIKYLHT
                                                                                                  LRMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLK
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0001677; F:transferase activity, transferring glycosyl.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco_trans_10.
PANTHER; PTHR11929; Glyco_trans_10;
COMDLete proteome; Glycooyltransferase; Transferase.
SEQUENCE 425 AA; 49329 MW; 1182AF180D124A34 CRC64;
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OrderedLocusNames=HP0379; ORFNames=HP_0379;
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PIR; C64567; C64567.
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Similarity
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             Complete | SEQUENCE
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PANTHER;
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Distributed under the Creative Commons Attribution-NoDerivs License
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                                                                                                                                                                                                                       RGFASFVASNANAPMRNAFYDALNSIEPVTGGGSVRNTLGYKVGNKSEFLSQYKFNLCFE
                                                                                                                                                                                                                                                                          NSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIKYLHT
                                                                 1 MFQPLLDAPIESASIEKMASKSPPPPLKIAVANWWGDEEIKEFKKSVLYFILSQRYAITL
                                                                                                     HONPINEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRY
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                                                   1 MPQPLLDAYVESASIEKMASKS-PPPLKIAVANWWGDEEIKBFKKSVLYFIFSQRYTIAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
MEDLINE=99120557; PubMed=9923682; DOI=10.1038/16495;
Alm R.A., Ling L.-S.L., Moir D.T., King B.L., Brown E.D., Doig P.C.,
Smith D.R., Noonan B., Guild B.C., deJonge B.L., Carmel G.,
Tummino P.J., Caruso A., Uria-Nickelsen M., Mills D.M., Ives C.,
Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E., Vovis G.F.,
                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Genomic sequence comparison of two unrelated isolates of the human gastric pathogen Helicobacter pylori.";
Nature 397:176-180(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     OSZLI3 HELPU PRELIMINARY; PRT; 454 AA.
09ZLI37
01-MAY-1999, integrated into UniProtKB/TrEMBL.
01-MAY-1999, sequence version 1.
21-FEB-2006, entry version 23.
ALPHA (1,3) FUCOSYLTRANSFERASE.
Name=fucT; ORFNames=jhp 0596;
Helicobacter pylori J99 (Campylobacter pylori J99).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
                          29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BioCyc; HPYL85963:JHP0596-MONOMER; -.
GO; GO:0016020; C:membrane; IEA,
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
 82.6%; Score 1972.5; DB 2; Length 425;
                          24; Indels
             Pred. No. 8.7e-121;
9; Mismatches 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AE001439; AAD06169.1; -; Genomic_DNA PIR; B71914; B71914.
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GO; GO:0006486; P:protein amino acid
InterPro; IPR001503; Glyco_trans_10.
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Query Match 82.6
Best Local Similarity 85.8
Matches 376; Conservative
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                                                                                                                                                                                                                                          Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms
Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                            1 MFQPLLDAYVESASIEKWASKSPPPLKIAVANWW--GDEEIKEFKKSVLYFIFSQRYTIA
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MEDLINE=99120557; PubMed=9923682; DOI=10.1038/16495;
Alm R.A., Ling L.-S.L., Moir D.T., King B.L., Brown E.D., Doig P.C.,
Smith D.R., Noman B., Garnel G.,
Tummino P.J., Carnel G.,
Tummino P.J., Carnel G.,
Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E., Vovis G.F.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Name=fucü; ORFNames=jhp_1002;
Helicobacter pylori 399 (Campylobacter pylori 399).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
                                                                                                                                                        13;
                                                                                                       454;
                                                                                                       DB 2; Length
                                                                                                                                                        Indels
PTHR11929; Glyco_trans_10; 1.
proteome; Glycosyltransferase; Transferase.
454 AA; 53448 MW; 3262687131263AB0 CRC64;
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
                                                                                                    82.1%; Score 1959.5; DB 2;
83.2%; Pred. No. 6.7e-120;
tive 25; Mismatches 37;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-1999, integrated into UniProtKB/TrEMBL
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21-FEB-2006, entry version 23.
ALPHA-(1,3)-FUCOSYLITANSFERASE.
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GO; GO:0006486; P:protein amino acid glycosylation; IEA
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transfering glycosyl. . .; IEA.
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                                                                                                                                                                                                    59 LHQNPNEPSDLVLGSPIGSARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFRDR
                                                                                                                                                                                                                                                                                      KRGVVS FVASNANA PMRNA FYDALNS I EPVTGGGSVKNTLGYNVKNKS EFLSQYKFNLCP
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                                                                                                                                      1 MFQPLLDAYVESASIEKMAS--KSPPPLKIAVANWWGDEEIKEFKKSVLYFIFSQRYTIA
                                                                                                                                                            MFOPLLDAFIESTPIKKKITFKSPPPLKIAVANWWGGAE--EFKKSTLYFILSQRYTIT
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                                                                                                              Gaps
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                                                                                                            20;
GO; GO:0016757; F:transferase activity, transferring glycosyl. GO; GO:0006486; P:protein amino acid glycosylation; IEA. InterPro; IPR01503; Glyco_trans 10. PANTHER; PTHF1929; Glyco-trans 10; 1. Complete proteome; Glycosyltransferase; Transferase. SEQUENCE 436 AA; 50699 MW; IDB2066AB98FA6IE CRC64;
                                                                                     Length 436;
                                                                                                            34; Indels
                                                                                   Query Match 80.3%; Score 1917; DB 2; Best Local Similarity 83.1%; Pred. No. 3.8e-117; Matches 365; Conservative 20; Mismatches 34;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUCLEOTIDE SEQUENCE.
STRAIN-DSM 6709;
PubMed=16000696; DOI=10.1093/glycob/cwj004;
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Bacteria, Proteobacteria, Epsilonproteobac
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                                                                                                                                                                     Gaps
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
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                                                                                                                   2; Length 432;
                                                                                                                Query Match 79.3%; Score 1894.5; DB 2; Length Best Local Similarity 81.3%; Pred. No. 1.1e-115; Matches 356; Conservative 30; Mismatches 33; Indels
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Submitted (FEB-2003) to the EMBL/GenBank/DDBJ databases.
                                                                        69D3A32FBD2F12C9 CRC64;
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InterPro; IPR001503; Glyco trans 10.
PANTHER; PTRR11929; Glyco trans 10; 1.
Glycosyltransferase; Transferase SEQUENCE 432 AA; 50503 MW; 69D3A32
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EMBL; AF006039; AAB93985.1; -; Genomic_DNA.
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GO; GO:0006486; P:protein amino
InterPro; IPR002105; Dockerin_1.
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Best Local Similarity 86.4%;
Matches 279; Conservative 1:
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QSL9S6;
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Distributed under the Creative Commons Attribution-NoDerivs License
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Bacteria; Proteobacteria; Bpailonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
NCBI_TaxID=210;
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Bird M.I.;
"Lewis X biosynthesis in Helicobacter pylori. Molecular cloning
EMBL; AP194963; AAF35291.2; -; Genomic_DNA.
GO; GO:0006417; F:tucosyltranaferase activity; IEA.
GO; GO:0006417; F:tucosyltranaferase activity; IEA.
GO; GO:0016757; F:tranaferase activity, transferring glycosyl.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco trans 10.
PANTHER; PTR11929; Glyco_trans 10.
Glycosyltranaferase; Transferase.
SEQUENCE 462 AA; 54560 MW; BD27F8B351ECE752 CRC64;
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MEDLINE=97407924; PubMed=9261148; DOI=10.1074/jbc.272.34.21349;
                                                                                                                                     DB 2; Length 462;
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                                                                                                                                    75.9%; Score 1812.5; DB 2; Length
76.2%; Pred. No. 2.8e-110;
iive 33; Mismatches 54; Indels
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01-JAN-1998, integrated into UniProtKB/TrEMBL
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07-FEB-2006, entry version 23.
Alpha-(1,3)-fucosyltransferase (EC 2.4.1.-).
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J. Biol. Chem. 272:21349-21356(1997).
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                                                                                                                                  Query Match
Best Local Similarity 76.23
Matches 346; Conservative
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GO; GO:0016020; C:membrane; IRA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:00167486; P:pransferase activity, transferring glycosyl.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
Interpro; IPR001503; Glyco_trans 10.
BANTHER, PIRR11929; Glyco_trans 10.
Glycosyltransferase; Transferase.
SEQUENCE 333 AA; 39154 MW; CFFCBIAC127E0A8C CRC64;
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Bacteria; Bacteroidetes; Bacteroidetes (class); Bacteroidales;
Bacteroidaceae; Bacteroides.
                                                                                                                                                                                                                                                                                                                                      DB 2; Length 333;
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GO; GO:0016020; C:membrane; IEA.

GO; GO:0008417; F:fucosyltransferase activity; IEA.

GO; GO:0016740; F:transferase activity; IEA.

GO; GO:0016746; F:transferase activity; IEA.

GO; GO:0006486; P:protein amino acid glycosylation; IEA.
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07-FEB-2006, entry version 6.
Putative LPS biosynthesis related glycosyltransferase.
                                                                                                                                                                                                                                                                                                                                      Score 1502.5; DB
Pred. No. 3.7e-90;
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PRELIMINARY;
                                                Matches 107; Conservative
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                                  Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=290397;
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Q2IE19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       90;
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Best Local S:
Matches 90
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                    Query Match
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                                                                                                                                                                                                                                  93 TGENEVPNFNLFDYAIGFDELDFRDRYLRMPLY----YDRLHHKAESVNDTTSPYKLKD 147
                                                                                                                                                                                                                                                                                                                                                                                                    SPSVAKDFNPKBFVNVHDFNNFDEAIDYIKYLHTHPNAYLDMLYENPLNALDGKAYFYQD 325
                                                                                                                                                                                                                                                                                                            -----LDRKPCSIVVSNNKWADPIRETFFKLLSSY 154
                                                                                                                                                        92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AE017125; AAP78373.1; -; Genomic_DNA.
BioCyc; HHEP235279:HH1776-MONOMER; -.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F: fucosyltransferase activity; IEA.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
GO; GO:0016757; F: transferase activity, transferring glycosyl. . .; IEA.
GO; GO:001686; P:protein amino acid glycosylation; IEA.
INTERPO: IPR001503; Glyco_trans 10.
PANTHER; PTHR11929; Glyco_trans 10; ICOMplete protecome; Glyco_transferase; Transferase.
SEQUENCE 359 AA; 42275 MW; B01B3FBBBC82D463 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms
                                                                                                                                                                                                                                                                                148 NSLYTLKKPSHQFKENHPNLCAVVNDESDPLKRGVVSFVASNAN--APMRNAFYDALNSI
                                                                                                                                                        WWGDEEIKEFKKSVLYFIFSORYTIALHONPNEFSDLVFSNPLGSARKILSYONAKRVFY
                                                                                                                                                                                     24 WDGFDTISNFIVDAL----SIQYEVVLSNEP----DYLFYSCFGTSH--LEYDCIK-IMF
                                                                                                                                                                                                                                                                                                                                            EPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWG
                                                                                                                            Gaps
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MEDLINE=22709201; PubMed=12810954; DOI=10.1073/pnas.1332093100;
MEDLINE=22709201; PubMed=12810954; DOI=10.1073/pnas.1332093100;
Sucrbaum S., Josenhans C., Sterzenbach T., Drescher B., Brandt P.,
Bell M., Droege M., Fartmann B., Fischer H.-P., Ge Z., Hoerster A.,
Holland R., Klein K., Koenig J., Macko L., Mendz G.L., Nyakatura G.,
Schauer D.B., Shen Z., Weber J., Frosch M., Fox J.G.;
"The complete genome sequence of the carcinogenic bacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
                                                                                                                            63;
                                                                                              DB 2; Length 331;
                                                                                           / Match 18.5%; Score 442.5; DB 2; Length 3 Local Similarity 35.8%; Pred. No. 8.4e-21; Nes 111; Conservative 42; Mismatches 94; Indels
                                                              331 AA; 39181 MW; 679FA409DF8CB864 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Helicobacter hepaticus.";
Proc. Natl. Acad. Sci. U.S.A. 100:7901-7906(2003).
InterPro; IPR001503; Glyco trans 10.
PANTHER; PTHR11929; Glyco trans 10; 1.
PROSITE; PS00448; CLOS CELLUJOSOME RPT; UNKNOWN 1.
Complete proteome; Transferase.
SEQUENCE 331 AA; 39181 MM; 679FP409DP8CB864 CRC
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01-0CT-2003, integrated into UniProtKB/TrEMBL.
01-0CT-2003, sequence version 1.
01-PEB-2006, entry version 12.
Alpha-1,3-fucosyltransferase.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q7VFA1_HELHP PRELIMINARY;
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Matches
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                                                                                                                         44 KSVLYFIFSQRYTIALHQNPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNL 103
                                                                                                                                                                                                                                                                                                             122
                                                                                                                                                                                                                                                                                                                                                                                                                                    123 KSRFC------TFVVSNGKADBIRTQFFDFLSQYNRVDSGGRYKNNIGNPV 167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             227
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Distributed under the Creative Commons Attribution-NoDerivs License
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                                                                                                                                                                104 FDYAIGFDELDFRDRYLRMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKEN
                                                                                                                                                                                                                                                                                          164 HPNLCAVVNDESDPLKRGVVSFVASNANA-PMRNAFYDALNSIEPVTGGGSVKNTLGYNV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             168 VDKYAFLKEGKFNIAFENSSTNGYITEKLIQAFAAHTIPIYWGDERISLPLDKMGGGINP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEFVNVHDFNNFDBAI DYIKYLHTHPNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    223 KNKSEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVA-----KDFNP
                                                                Gaps
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US DOB Joint Genome Institute;
US DOB Joint Genome Institute;
US DOB Joint Genome Institute;
Copeland A., Lucas S., Lapidus A., Barry K., Detter J.C., Glavina 'Hammon N., Israni S., Pitluck S., Brettin T., Bruce D., Han C., Tapia R., Gilna P., Kiss H., Schmutz J., Larimer F., Land M., Kyrpides N., Anderson I., Sanford R.A., Ritalahti K.M., Thomas H.S Kirby J.R., Zhulin I.B., Loeffler F.B., Richardson P.; Complete sequence of Anaeromyxobacter dehalogenans 2CP-C."; Submitted (JAN-2006) to the EMBL/GenBank/DDBJ databases.
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                                                                68;
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07-MAR-2006, entry version 1.
Putative LPS biosynthesis related glycosyltransferase.
ORFNames=Adeh 3065
Anaeromyxobacter dehalogenans 2CP-C.
Bacteria; Proteobacteria; Deltaprotecobacteria; Myxococcales;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 359;
                                                                Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17.5%; Score 419; DB 2; L
31.9%; Pred. No. 3.2e-19;
iive 51; Mismatches 109;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cystobacterineae; Myxococcaceae; Anaeromyxobacter
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        275 DEKLENFLLHIFNQPLEKAYRRGFG--QWRCNIEK 307
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273 FNPKE-FVNVHDFNNFDEAIDYIKYLHTHPNA-YLDMLYENPLNALDGKAYFYQDLSFKK 330
                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
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Matches 88; Conservative
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                                                                                                                                             331 ILAFFKTILE 340
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                                                                                                            141
                                           144 KLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKRGVVSFVASNANAPMRNAFYDALN 203
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                                                                                                                                                                                                                                                                                                                       WGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKYLHTHPNAYLDMLYENPLNALDGKAYFY 323
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "The genes responsible for O-antigen synthesis of Vibrio cholerae 0139 are closely related to those of Vibrio cholerae 022."; Gene 237:321-332(1999).
                                                                               104 SIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIY
                                                                                                                                                                                                                     154 KKPSHQFKENHPNLCAVVNDESDPLKRGVVSFVASNANAPMRNAFYDALNSIEPVTGGGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    214 VKNTLGYNVKNKSEFLSQYKFNLCFENSQGY-GYVTEKILDAYFSHTIPIYWGSPSVAKD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria; Gammaproteobacteria; Vibrionales; Vibrionaceae; Vibrio.
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GO; GO:0016021; F:fucosyltransferase activity; IEA.
GO; GO:0006417; F:fucosyltransferase activity; IEA.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IFR001503; Glyco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    OB7156 VIBCH PRELIMINARY; PRT; 346 AA. 087156, 01-NOV-1998, integrated into UniProtKB/TrEMBL 01-NOV-1998, sequence version 1. 07-FEB-2006, entry version 22. While protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                QD 325
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SD 261
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Sinchinger L., Pachebat J.A., Gloeckner G., Rajandream M.A.,

Bichinger L., Pachebat J.A., Gloeckner G., Rajandream M.A.,

Bichinger L., Pachebat J.A., Gloeckner G., Rajandream M.A.,

Bichinger L., Pachebat J.A., Gloeckner G., Rajandream M.A.,

Bucgang R., Berriman M., Song J., Olsen R., Szafranski K., Xu Q.,

Bankier A.T., Lehmann R., Hamlin N., Davies R., Gaudet P., Pey P.,

Bankier A.T., Lehmann R., Hamlin N., Davies R., Gaudet P., Pey P.,

Rerhornou A., Nie X., Hall N., Anjard C., Hemphill L., Bason N.,

Rerhornou A., Nie X., Hall N., Anjard C., Hemphill L., Bason N.,

Rarbrother P., Desany B., Just E., Morio T., Rost R., Churcher C.M.,

Rarbrother P., Desany B., Just E., Morio T., Rost R., Churcher C.M.,

Ruzny D.M., Mourier T., Pain A., Lu M., Harper D., Lindsay R.,

Musch J., Manger K.D., Quiles M., Madan Babu M., Saito T.,

Buchrieser C., Wardroper A., Felder M., Thangavelu M., Johnson D.,

Ranghts A., Loulsaged H., Hernandez J., Rabbinowitsch B., Steffen D.,

Sanders M., Ma J., Kohara Y., Sharp S., Simmonds M.N., Spiegler S.,

Tivey A., Sugano S., White B., Walker D., Woodward J.R., Winckler T.,

Tanaka Y., Shaulsky G., Schleicher M., Weinstock G.M., Rosenthal A.,

Kay R.R., Williams J.G., Dear P.H., Noegel A.A., Barrell B.G.,
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PIPENTFIDKRNFSNYE---DLYLYLKNMPDGEYLKYL-ENIENYLNSE----QSLQFKS 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66 FSDLVFSNPLG--SARKIL---SYQNAKRVFYTGENE--VPNFNLFDYAIGFDEL-DFRD 117
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Distributed under the Creative Commons Attribution-NoDerivs License
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7 DAYVESASIEKMASK-SPPPLKIAVANWWGDEEIKEFKKSVLYFIFSQRYTIALHQNPNE
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GO; GO:0016020; c:membrane; IEA.

GO; GO:0008417; F:fucosyltransferase activity; IEA.

GO; GO:0006486; P:protein amino acid glycosylation; IEA.

InterPro; IPR001503; Glyco.trans.10.

BANTHER; PTHR11929; Glyco.trans.10; 1.

Glycosyltransferase; GolgI stack; Hypothetical protein; Transferase;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                24-MXY-2005, integrated into UniProtKB/TrEMBL.
24-MXY-2005, sequence version 1.
24-MXY-2006, entry version 5.
Hypothetical protein futl.
Name-futl; ORFNames=DDB0219943;
Dictyostelium discoideum (Slime mold).
BURATYOAT, Mycetczoa; Dictyostelium.
NCBI_TaxID=44689;
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Stransland B. St
                                                                                      118 R---YLRM-PLYY---DRLHHKABSVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAV 170
                                                                                                                                                                                                                                                                      171 VNDESDPLKRGVVSFVASNANAPMRNAFYDALNSIRPVTGGGSVKNTLGYNVKNKSEFLS 230
                                                                                                                                                                                                                                                                                                                           231 QYKPNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDF-NPKEFVNVHDFNNFDE 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             251 RYNPAIAFENSLCKDYITEKLWESLSVGTIPIYLGAPNIMEFLPDPDSIINVRDPKSVND 310
97 SSNKIYNNTLKRYNPRQITIGWTMESGGLYRFEGDSNFIISNFNI---TVGYPRVNDFNK 153
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             290 AIDYIKYLHTHPNAYLDML-----YENPLNALDGKAYFYQDLSFKKIL 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  154 QTHIYVPYGPVEYSGSDSYAHSAKPDRIKEIPSK-RNNSIVWIS--SNCWHEDY----
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Transmembrane.
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-!- CAUTION: The sequence shown here is derived from an EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry which is
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GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IFR01503; Glyco trans 10.
PANTHER; PTHR11929; Glyco_trans_10; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Dictyostelium discoideum (Slime mold).
Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium.
NCBI_TaxID=44689;
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Eichinger I., Pachebat J.A., Gloeckner G., Rajandream M.-A.,
Sucgang R., Berriman M., Song J., Olsen R., Szafranski K., Xu O.,
Runggal B., Kummerfeld S., Madera M., Konfortov B.A., Rivero F.,
Bankier A.T., Lehmann R., Hamlin N., Davies R., Gaudet P., Fey P.,
Bankier A.T., Lehmann R., Hamlin N., Davies R., Gaudet P., Fey P.,
Rarborther K., Chen G., Saunders D., Sodergren E., Davis P.,
Rarborther P., Desany B., Just E., Morio T., Rost R., Churcher C.,
Rarborther P., Desany B., Just E., Morio T., Rost R., Churcher C.,
Muzny D., Mourier T., Pain A., Lu M., Harper D., Lindsay R.,
Rarborther A., Felder M., Thangavelu M., Groin A., Goodhead I.,
Wardroper A., Felder M., Thangavelu M., Johnson D., Knights A.,
Unushihara H., Harnandez J., Rabbinowitsch E., Steffen D., Sanders M.,
Ma J., Kohara Y., Sharp S., Simmonds M., Spiegler S., Tivey A.,
Sugano S., White B., Walker D., Woodward J., Winckler T., Tanaka Y.,
Shaulsky G., Schleicher M., Weinstock G., Rosenthal A., Cox B.C.,
Alliams J., Dear P.H., Noegel A.A., Barrell B., Kuspa A.,
Milliams J., Dear P.H., Noegel A.A., Barrell B., Kuspa A.,
The genome of the social amoeba Dictyostelium discoideum.";
                                          14;
                                                                                                                                                             148
                                                                                                                                                                                                                                                                                                                                                  281 FIVUDSFGKCLKNMPTSNFLSRGSGDPFERKRLFITRYKFTIVFENSICKDYVSEKVLDA 340
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Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                    48 YPIFSORYTIALHONPNE----FSDLV--FSNPLGSARKILSYQNAKRVFYTGENEVP
                                                                                                                 131 YYIVRKPY-----YPNOKLDMEIWSDYIVDFEAP----KKKLSSRNVPRTLISMEPQ-P
                                                                                                                                                               100 N-----FNLFDYAIGFD-ELDFRDRYLRMPLYYDRLHHKAESVNDTTSPYKLKDN-
                                                                                                                                                                                                                                           149 SLYTLKKPSHQFKENHP----NLCAVVNDESDPLKRGVVSFVASNANAPMRNAFYDALNS
                                                                                                                                                                                                                                                                                                                             205 IEPVTG-GGSVKNT------LGYNVKNKSEFLSQYKFNLCFENSQGYGYVTEKILDA
                                                                                                                                                                                                   180 NRTCEFDKDCFEFFNFKVSFESQSDIR------MGFD-----TPSSSAYKLYNKL
                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                            255 YFSHTIPIYWGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKYLHTHPNAYLDM 307
                                                                                                                                                                                                                                                                                                                                                                                                                               341 LIAGSVPIFMGHPSTIKYLPLNSYIFVGDFKNAEHLANHLKFLSENDNEYFKL 393
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                                          63;
Length 462;
                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GO; GO:0016020; C:membrane; IEA.
GO; GO:0016417; F:fucosyltransferase activity; IEA.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IPR013320; ConA like subgrp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Dictyostelium discoideum (Slime mold).
Eukaryota, Mycetozoa, Dictyosteliida, Dictyostelium.
8.0%; Score 191.5; DB 2; 5.6%; Pred. No. 0.00034;
                                       50; Mismatches 105;
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                     25.6%;
Query Match
Best Local Similarity 25.61
Matches 75; Conservative
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07-MAR-2006,
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                                                                                                                                                                                                                                                                               88 KRVFYTGENEVPNFNL-FDYAIGFDELDFRDRYLRMPLYYDRLHHKAESVNDTTSPYKLK 146
                                                                                                                                                                                                                                                                                                                                                                        147 DNSLYTLKKPSHOFKENHPNLCA-----VVNDESDPL----KRGVVSFVASNANA-- 192
                                                                                                                                                                                                                                                                                                                                                                                                                     141 DOVQVTF------ACSWGSRDDGNIENFRKEPVKFEDKNGFVGFMSTNCDGGG 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               188 AIYRTCYIIEMAKHTQVDAMGECLANKKLAKKOFPHAVFDDLGDSLRIKELVLSKYKFSL 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               237 CFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKY 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       248 AFENNNITDYVTEKVYTSLLSGSIPIYMGSPNIDEWVPNKSIIKTDDFKSPKELVDYIIY 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       297 LHTHPNAYLDMLYENPLNALDGKAYP---YQDLSFKKILAFFKTILEN------DTI 344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         308 LSKNKTAY------EBYFEWKKQPFPEKFIEKYNRCIFYGADCRLCQYIDNL 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  345 YHKSSTSFMWECDLDEPLASIDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNY---- 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 34 WG-----DEBIKEFKKSV-LYFIFSQRYTIALHONPNEFSDLVFSNPLGSARKILSYONA 87
                                                                                                                                                                                                                 44 WGLPNYLGQHVKKGKCPVDCVPISQQQP----HADVDAI--LFEAQPLAS----WSYTFL 93
                                                                                          Query Match 7.6%; Score 182; DB 2; Length 665; Best Local Similarity 21.6%; Pred. No. 0.0022; Matches 100; Conservative 72; Mismatches 167; Indels 124; Gaps
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                     Hypothetical protein.
SEQUENCE 665 AA; 76223 MW; D42588B008EBDB46 CRC64;
PANTHER; PTHR11929; Glyco_trans_10; 1.
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Search completed: August 11, 2006, 19:44:51 Job time : 158.198 secs

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2. /EMC_Celerra_SIDS3/ptodata/2/iaa/6_COMB.pep:*
3. /EMC_Celerra_SIDS3/ptodata/2/iaa/7_COMB.pep:*
4. /EMC_Celerra_SIDS3/ptodata/2/iaa/H_COMB.pep:*
5. /EMC_Celerra_SIDS3/ptodata/2/iaa/PCTUS_COMB.pep:*
6. /EMC_Celerra_SIDS3/ptodata/2/iaa/RE_COMB.pep:*
7. /EMC_Celerra_SIDS3/ptodata/2/iaa/RE_COMB.pep:*
7. /EMC_Celerra_SIDS3/ptodata/2/iaa/RE_COMB.pep:*
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1 MFQPLLDAYVESASIEKMAS......KIYRKAYQKPIKNPYPYCAP
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GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
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US-09-032-315-7

US-09-032-315-8

US-09-032-315-8

US-09-032-315-8

US-09-032-315-8

US-09-032-315-8

US-10-189-977A-8

US-10-392-098A-8

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US-10-392-098A-8

US-09-033-524A-2

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Listing first 45 summaries
                                                                                            - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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Match Length
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Perfect score:
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                                                                                            OM protein
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Sequence 3, Appli Sequence 13, Appli Sequence 16, Appli Sequence 14, Appl Sequence 14, Appl Sequence 14, Appl Sequence 14, Appl Sequence 18, Appl Sequence 11, Appl Sequence 9, Applii Sequence 9, Applii			Length 464; Indels 16; Gaps 2	KEPKKSVLYFIPSQRYTIALH 60 KEPKNSVLYPILSQRYTITLH 60	NLFDYAIGFDELDFRDRYL 120 	ENHPNICAVVNDESDPLKR 180 	PVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN 240 	HDFNNFDEAIDYIKYLHTH 300 HDFKNFDEAIDYIKYLHTH 300
US-10-189-977A-3 US-10-392-098A-3 US-10-080-960-13 US-10-080-960-16 US-09-092-315-14 US-09-733-524A-14 US-10-392-098A-14 US-10-080-960-18 US-10-080-960-18 US-09-092-315-11 US-09-092-315-11 US-09-092-315-11 US-10-189-977A-11 US-10-189-977A-9 US-09-583-110-3100 US-09-583-110-3100 US-09-583-110-3100 US-09-583-110-3100 US-09-133-524A-9 US-09-133-524A-9 US-09-133-524A-9 US-09-133-524A-9 US-09-133-524A-9 US-09-133-524A-9	ALIGNMENTS	5 /093 /048 sion	Score 2086; DB 2; L Pred. No. 1.6e-189; 15; Mismatches 26;	SKSPPPLKIAVANWWGDEBI 	ONPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYL 	RMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKR 	GVVSFVASNANAPMRNAFYDALINSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN 	SQGYGYVTEKILDAYPSHTIPIYWGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKYLHTH
4440 04440 0020 0020 0020 0020 0020 002		on US/09 iane E. ming ALPHA-1, 4/049001 NUMBER: 1998-06 : 22 r Window	87.4%; y 87.4%; rvative	YVESASIEKMA YVESASIEKMA	LVFSNPLGSA LVFGNPLGSA	CHHKAESVND CHHKAESVND	FVASNANAPMRNAFYDALNSIE 	BKILDAYFSH : BKIIDAYFSH
225.79.99.99.99.99.99.99.99.99.99.99.99.99.		RESULT 1 'Sequence 1, Application US/0: 'Patent No. 6399337 'GENERAL INFORMATION: 'APPLICANT: Taylor, Diane E. APPLICANT: Ge, Zhongming TITLE OF INVENTION: ALPHA-1. 'FILE REFERENCE: 07254/04900. 'CURRENT FILING DATE: 1998-06: 'CURRENT FILING DATE: 1998-06: 'ERALIER APPLICATION NUMBER: EARLIER PILING DATE: 1997-06 'NUMBER OF SEQ ID NOS: 22 'SOFTWARE: FastSEQ for Window; SOFTWARE: FastSEQ for Window; SOFTWARE: FastSEQ for Window; TYPE: PAT	Similarity 4; Conservat	MFQPLLDAY MFQPLLDAY	QNPNEFSDI QNPNEFSDI	RMPLYYDRI RMPLYYDRI	GVVSFVASI GFASFVASI	SQGYGYVTI - TQGYGYVTI
1861 1861 1861 168 168 168 149 141 141 126 126 155 155 155 155 155 155 155 155 155 15		ULT 1 09-092-315-1 equence 1, A attent No. 63 attent No. 63 attent No. 64 APPLICANT: TITLE OF INVERSITY FILE REPRENT APPL CURRENT APPL CAURER APPL EARLIER APPL EARLIER PILL EARLIER PILL EARLIER PILL EARLIER PILL INUMBER OF SE SOFTWARE: FA EQ ID NO 1 LENGTH: 464 LENGTH: 464 LENGTH: PRT ORGANISM: HO 09 100 1 LENGTH: PRT ORGANISM: HO 09-092-315-1	atch cal 39		61	121	181	241
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                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 1, Application US/09733524A

Patent No. 6534298

GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFRENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/733,524A
CURRENT APLICATION NUMBER: US 09/092,315
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ. ID NOS: 27

SOFTWARE: Fast SEQ for Windows Version 4.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 QNPNEFSDLVFGNPLGSARKILSYQNAKRVFYTGENESPNFNLFDYAIGFDELDFNDRYL 120
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87.4%; Score 2086; DB 2;
Best Local Similarity 87.4%; Pred. No. 1.6e-189;
Matches 394; Conservative 15; Mismatches 26;
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RESULT 3 US-10-189-977A-1

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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Calculate E.
APPLICANT: Taylor, Calculate E.
APPLICANT: Taylor, Calculate Acids ENCODING ALPHA-1,3
TITLE OF INVENTION: PUCOSYLITRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/733,524
FRIOR APPLICATION NUMBER: US/09/733,524
FRIOR APPLICATION NUMBER: US/09/733,524
FRIOR PLING DATE: 1090-06-05
FRIOR PLING DATE: 1998-06-05
FRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FRAESEQ for Windows Version 4.0
SEQ ID NOS: 27
SEQ ID NOS: 27
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87.4%; Score 2086; DB 2;
Best Local Similarity 87.4%; Pred. No. 1.6e-189;
Matches 394; Conservative 15; Mismatches 26;
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Patent No. 7029891
Batent No. 7029891
BAPLICANT: Taylor, Diane B.
APPLICANT: Ge, Zhongming
APPLICANT: Oniversity of Alberta
APPLICANT: University of Alberta
TITLE OF INVENTION: Alpha-1,3 Pucosyltransferase
FILE REFERENCE: 017398-000420US
CURRENT APPLICATION NUMBER: US/10/392,098A
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1, Application US/10189977A
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US-10-189-977A-1
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US-10-392-098A-1
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PRIOR FILING DATE: 1997-06-06
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US-10-189-977A-7
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                                                                              LENGTH: 478
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APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Go, Zhongming

TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3

TITLE OF INVENTION: FUCOSYLITRANSPERASES AND EXPRESSION SYSTEMS FOR MAKING AND FITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REFERENCE: 07254-04902.

CURRENT APPLICATION NUMBER: US/09/733,524A

PRIOR APPLICATION NUMBER: US 09/092,315

PRIOR PILING DATE: 1998-06-05

PRIOR APPLICATION NUMBER: US 60/048,857
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PLVTIDDLRVNYDDLRVNYDDLRINYDDLRVNYDDLRVNYDDLRINYDDLRVNYDDLRVN 418
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; OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
US-10-392-098A-1
                                                                                                                                                                                                                                                                                                                                                                                                     Length 464;
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              PRIOR APPLICATION NUMBER: US/10/120,319
PRIOR FILING DATE: 2002-04-09
PRIOR PILING DATE: 2002-04-09
PRIOR PILING DATE: 1997-06-06
PRIOR PILING DATE: 1997-06-05
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR PILING DATE: 1998-06-05
PRIOR FILING DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SOFTWARE: Patentin Ver: 2.1
LENGTH: 464
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2003-03-17
                                                                                                                                                                                                                                                           TYPE: PRT
ORGANISM: Helicobacter pylori
  CURRENT FILING DATE:
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US-09-733-524A-7
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APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REPERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/10/189,977A
CURRENT APPLICATION NUMBER: US/09/733,524
FRIOR PILING DATE: 2000-12-07
PRIOR PILING DATE: 1099-06-06
PRIOR FILING DATE: 1099-06-06
PRIOR FILING DATE: 199-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FREUSED FOR WINDOWS VERSION 4.0
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NUMBER OF SEQ ID NOS: 27
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 7
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                                                                                                         TYPE: PRT
ORGANISM: Helicobacter pylori
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; ORGANISM: Helicobacter pylori
US-10-189-977A-7
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                                                          Gaps
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OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
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84.7%; Pred. No. 7.9e-189;
Live 15; Mismatches 26; Indels 3
Length 478;
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                                                       26; Indels
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APPLICANT: G4, Zhongming;
APPLICANT: University of Alberta
TTTLE OF INVENTION: Alpha-1,3 Fucosyltransferase;
TILE REFERENCE: 017398-0004200S
CURRENT APPLICATION NUMBER: US/10/1392,098A
CURRENT FILING DATE: 2003-03-17
PRIOR PLILING DATE: 2002-04-09
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR PLILING DATE: 1997-06-06
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR FILING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR FILING DATE: 2000-12-07
PRIOR APPLICATION NUMBER: US 09/733,524
PRIOR FILING DATE: 2000-12-07
PRIOR APPLICATION NUMBER: US 09/733,524
PRIOR FILING DATE: 2000-12-07
PRIOR APPLICATION NUMBER: US 09/733,524
PRIOR PRIOR DATE: 2000-12-07
PRIOR APPLICATION NUMBER: US 09/733,524
PRIOR PRIOR DATE: 2000-12-07
PRIOR APPLICATION NUMBER: US 09/733,524
PRIOR PRIOR PRIOR DATE: 1098-06-05
PRIOR APPLICATION NUMBER: US 09/733,524
PRIOR APPLICATION NUMBER: US 09/733,524
PRIOR PRIOR PRIOR DATE: 1098-06-05
PRIOR APPLICATION NUMBER: US 09/733,524
  Query Match 87.1%; Score 2079; DB 2; Best Local Similarity 84.7%; Pred. No. 7.9e-189; Matches 394; Conservative 15; Mismatches 26;
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Patent No. 7029891
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ORGANISM: Helicobacter pylori
FEATURE:
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APPLICANT: Taylor, Diane E.
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Best Local Similarity Matches 394; Conserva

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1 MFQPLLDAYVESASIEKWASKSPPPLKIAVANWWGDEEIKEFKNSVLYFILSQRYTITLH
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE;
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE;
FILE REPRENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1990-06-05
ERRLIER APPLICATION NUMBER: US 60/048,857
ERRLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOUTWARE: PASSESEQ FOR WINDOWS VETSION 3.0
SEQ THANE: 478
LENGTH: 478
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84.5%; Pred. No. 2.9e-188;
tive 15; Mismatches 27;
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Patent No. 6399337
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Matches 393; Conservative
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US-09-092-315-7
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                        RESULT 10
US-09-733-524A-8
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APPLICANT: Taylor, Diane B.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALFHA-1, 3-FUCOSYLTRANFERASE
FILE REFERRNCE: 07254/049001
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT APPLICATION NUMBER: US 60/048,857
EARLIER APPLICATION NUMBER: US 60/048,857
EARLIER FILING DATE: 1998-06-05
NUMBER OF SEG ID NOS: 22
SOFTWARE: PastSEQ for Windows Version 3.0
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Patent No. 6399337
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US-09-092-315-8
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Best Local Similarity 86.5%
Matches 384; Conservative
                                                                                                            PLASIDDLRV.
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US-09-092-315-8
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Sequence 8, Application US/09733524A

Patent No. 6534298

GENERAL INPORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3

TITLE OF INVENTION: PUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND TITLE OF INVENTION: PUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002

CURRENT PILING DATE: 2006-12-07

PRIOR PILING DATE: 1999-06-05

PRIOR PILING DATE: 1999-06-05

PRIOR PILING DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 27

SOFTWARE: FASLESC for Windows Version 4.0

SEC ID NO 8 105-10-189-977A-8
Sequence 8, Application US/10189977A
Sequence 8, Application US/10189977A
Sequence 8, Patent No. 6962806
SEGRETAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Taylor, Diane B.
TITLE OF INVENTION: NUCLETC ACIDS ENCODING ALPHA-1, 3
TITLE OF INVENTION: FUCCOSTLITRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND 7 240 ONPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYALGFDELDFRDRYL 120 241 SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYVRYLHTH 300 301 PNAYLDMLYENPLNTLDGKAYFYQNLSFKKILDFFKTILENDTIYH--NNPFIFYRDLNE 358 SQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKYLHTH 300 PNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFMWECDLDE 360 PLASI-----DDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYERLLQN 413 9 9 181 GPASFVASNANAPMRNAFYDALNSIEPVTGGGAVKNTLGYKVGNKSEFLSGYKFNLCFEN 1 MFQPLLDAPIBSASIEKMASKSPPPLKIAVANWWGDEBIKEFKKSTLYFILSQHYTITLH RMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKR GVVSFVASNANAPMRNAFYDALINSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN 1 MFQPLLDAYVESASIEKMASKSPPPLKIAVANWWGDEEIKEFKKSVLYFIFSQRYTIALH Gaps 9; Length 454; 24; Indels DB 2; Query Match

86.7%; Score 2070.5; DB 2
Best Local Similarity 86.5%; Pred. No. 4.7e-188;
Matches 384; Conservative 27; Mismatches 24;

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PRIOR APPLICATION NUMBER: US
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APPLICANT: University of Alberta
TITLE OF INVENTION: Alpha-1,3 Fucosyltransferase
FILE REFERENCE: 017398-000420US
CURRENT APPLICATION NUMBER: US/10/392,098A
CURRENT PILING DATE: 2003-03-17
PRIOR PILING DATE: 2002-04-09
PRIOR PILING DATE: 1997-06-06
PRIOR PILING DATE: 1997-06-06
PRIOR PILING DATE: 1997-06-06
PRIOR PILING DATE: 1997-06-06
PRIOR FILING DATE: 1997-06-06
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86.7%; Score 2070.5; DB 2
Best Local Similarity 86.5%; Pred. No. 4.7e-188;
Matches 384; Conservative 27; Mismatches 24;
         EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/10/189,977A
CURRENT FILING DATE: 2002-03-07
PRIOR PILING DATE: 2000-12-07
PRIOR PILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR FILING DATE: 1997-06-06
SOFTWARE: FASECO ID NOS: 27
SOFTWARE: FASECO ID NOS: 27
SOFTWARE: FASECO ID NOS: 27
SEQ ID NO 8
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; BENERAL INFORMATION:
; APPLICANT: Taylor, Diame E.
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US-10-392-098A-8
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                                                                                                                                                                                                                                                                                                                  Query Match 86.7%; Score 2070.5; DB 3; Length 454; Best Local Similarity 86.5%; Pred. No. 4.7e-188; Matches 384; Conservative 27; Mismatches 24; Indels 9;
                                                                                                                                                                                               PEATURE:
OTHER INFORMATION: H. pylori strain NCTC11637
OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
US-10-392-0988-0
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APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALEA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1999-06-05
EARLIER APPLICATION NUMBER: US 60/048,857
EARLIER APPLICATION NUMBER: US 60/048,857
HUMBER OF SEQ ID NOS: 22
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US-09-092-315-5
                                                                                                                                                 TYPE: PRT
ORGANISM: Helicobacter pylori
                 PRIOR FILING DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 8
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Best Local Similarity
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LENGTH: 476
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Sequence 5, Application US/10189977A Patent No. 6962806
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US-10-189-977A-5
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US-10-189-977A-5
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Requence 5, Application US/09733524A

Requence 5, Application US/09733524A

Requence 5, Application US/09733524A

GENERAL INFORMATION:

APPLICANT: Taylor, Diane E.

APPLICANT: Ge, Zhongming

TITLE OF INVENTION: WIGHER CAIDS ENCODING ALPHA-1,3

TITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REPERENCE: 07254-049002

CURRENT APPLICATION NUMBER: US/09/733,524A

CURRENT PILING DATE: 2000-12-07

PRIOR APPLICATION NUMBER: US 09/092,315

PRIOR APPLICATION NUMBER: US 60/048,857

PRIOR PILING DATE: 1999-06-06

NUMBER OF SEQ ID NOS: 27

SOFTWARE: PASTSEQ for Windows Version 4.0

SEQ ID NO S. 27

SEQ ID NO S. 27
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31; Gaps
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28; Indels
13; Mismatches
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ORGANISM: Helicobacter pylori
394; Conservative
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Matches 394; Conservative
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GENERAL INC. 93-280-6

GENERAL INC. 93-280-6

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: GP. Zhongming

TITLE OF INVENTION: WUCLEC ACIDS ENCODING ALPHA-1, 3

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REFERENCE: 07254-04900.

CURRENT APPLICATION NUMBER: US/10/189, 977A

CURRENT FILING DATE: 2000-12-07

PRIOR FILING DATE: 1998-06-05

PRIOR FILING DATE: 1998-06-05

PRIOR FILING DATE: 1998-06-06

NUMBER OF SEQ ID NOS: 27

SOFTWARE: FREEKE PARESEQ for Windows Version 4.0
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Best Local Similarity 84.5%; Pred. No. 7e-187;
Matches 394; Conservative 13; Mismatches 28;
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Search completed: August 11, 2006, 19:47:33 Job time : 31.5753 secs

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TYPE: PRT
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GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
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US-10-139-977-1
US-10-392-098-1
US-10-1392-098-7
US-10-139-977-7
US-10-189-977-7
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US-10-189-977-8
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100.0%; Score 2388; DB 5; Length
Best Local Similarity 100.0%; Pred. No. 9.2e-191;
Matches 446; Conservative 0; Mismatches 0; Indels
                                                                                APPLICANT: Simala-Grant, Joanne
APPLICANT: Taylor, Diane
APPLICANT: Taylor, Diane
APPLICANT: Johnson, Karl F.
APPLICANT: Bezila, Daniel James
APPLICANT: Recently of Alberta
APPLICANT: Governors of the University of Alberta
TITLE OF INVENTION: H. Pylori Fucosyltransferases
FILE REPERENCE: 019957-019400US
CURRENT APPLICATION NUMBER: US/10/764,212
CURRENT FILING DATE: 2004-01-22
NUMBER OF SEQ ID NOS: 81
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 16
Sequence 16, Application US/10764212
Publication No. US20050164338A1
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                                                       GENERAL INFORMATION:
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                                                            Sequence 1, Application US/10120319; Publication No. US20020164749A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT PILING DATE: 2002-04-09
FRIOR PPLICATION NUMBER: BARLIER APPLICATION NUMBER: 09/092,315
PRIOR PPLICATION NUMBER: EARLIER APPLICATION NUMBER: US 60/048,857
PRIOR FILING DATE: EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: PSECSEQ for Windows Version 3.0
SEQ ID NO 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MFQPLLDAYVESASIEKMASKSPPPLKIAVANWWGDERIKEFKNSVLYFILSQRYTITLH
PLASIDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYBRLLQNASPLLBL
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87.4%; Score 2086; DB 4; Length 464;
Best Local Similarity 87.4%; Pred. No. 1.7e-165;
Matches 394; Conservative 15; Mismatches 26; Indels 10
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ORGANISM: Helicobacter pylori
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US-10-120-319-1
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RESULT 3

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APPLICANT: TAYLOR, Diane E.
APPLICANT: TAYLOR, Diane E.
APPLICANT: Ge Zhongming
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: TUCCETLERANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: 07254-049002
CURRENT APPLICATION NUMBER: US/10/392,098
CURRENT FILING DATE: 2003-03-17
PRIOR APPLICATION NUMBER: US/09/733,524A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   61 QNPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYL 120
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                                                                                APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
TILE REPERBNCE: 07224/049001
CURRENT APPLICATION NUMBER: US/10/189,977
CURRENT PILING DATE: 2002-07-03
FRIOR APPLICATION NUMBER: US/09/092,315
FRIOR APPLICATION NUMBER: US 60/048,857
FRIOR PILING DATE: 1999-06-05
FRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FASELEQ for Windows Version 3.0
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Best Local Similarity 87.4%; Pred. No. 1.7e-165;
Matches 394; Conservative 15; Mismatches 26;
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Publication No. US20030166212A1
Sequence 1, Application US/10189977
Publication No. US20030166211A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
ORGANISM: Helicobacter pylori
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LENGTH: 478
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Squence 7, Application US/10392098

Publication No. US20030166212A1

GENERAL INFORMATION:

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1, 3

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REFERENCE: 07254-049002

CURRENT APPLICATION NUMBER: US/10/392,098

CURRENT APPLICATION NUMBER: US/09/733,524A

PRIOR PILING DATE: 2000-12-07

PRIOR APPLICATION NUMBER: US 60/048,857

PRIOR FILING DATE: 1999-06-05

NUMBER OF SEQ ID NOS: 27

SOFTWARE: FastSEQ for Windows Version 4.0
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                                                                                                                                                                                                                                Length 464;
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419 YERLLSKATPLLELSQNTTSKIYRKAYQKSL 449
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PRIOR FILING DATE: 2000-12-07
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR FILING DATE: 1998-06-05
PRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 1
                                                                                                                                                         ; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-10-392-098-1
                                                                                                                                            LENGTH: 464
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US-10-392-098-7
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APPLICANT: TAYLOR, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT FILING DATE: 2002-04-09
FRIOR PLILING DATE: EARLIER APPLICATION NUMBER: 09/092,315
FRIOR FILING DATE: EARLIER PILLING DATE: 1998-06-05
FRIOR FILING DATE: EARLIER FILING DATE: 1997-06-06
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                                                                                                 Length 478;
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                                                                                                 Query Match
87.1%; Score 2079; DB 4; Length 47
Best Local Similarity 84.7%; Pred. No. 6.7e-165;
Matches 394; Conservative 15; Mismatches 26; Indels
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SOFTWARE: FastSEQ for Windows Version 3.0
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, ORGANISM: Helicobacter pylori
US-10-392-098-7
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; ORGANISM: Helicobacter pylori
US-10-120-319-7
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      RMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKR
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APPLICANT: Taylor, Diane B.
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE; FILE REFERENCE: 07254/049001
CURRENT FILING DATE: 2002-07-03
FRICH RAPLICATION NUMBER: US/09/092,315
FRICH APPLICATION NUMBER: US/09/092,315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match

86.8%; Score 2073; DB 4;
Best Local Similarity 84.5%; Pred. No. 2.1e-164;
Matches 393; Conservative 15; Mismatches 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 7, Application US/10189977
Publication No. US20030166211A1
GENERAL INFORMATION:
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ORGANISM: Helicobacter pylori
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GENERAL INFORMATION:
APPLICANT: The Governers of the University of Alberta, a Canada Corporation
APPLICANT: The Governers of the University of Alberta, a Canada Corporation
APPLICANT: Taylor, Diane B.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: FUCOSYLIRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM
FILE REFERENCE: 07254/049002
CURRENT PELLING DATE: 2000-12-14
FRIOR PILLING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: 09/992,315
PRIOR APPLICATION NUMBER: 06/992,315
PRIOR PILLING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 20
SOFTWARE PASSES FOR Windows Version 4.0
SEQ ID NO 1
LENGTH: 501 MAKING AND ñ 360 180 120 240 300 241 TQGYGYVTEKIIDAYFSHTIPIYQGSPSVAKDFNPKSFVNVHDFKNFDEAIDYIKYLHTH 300 360 || :|||||| 359 PLVTIDDLRVNYDDLRVNYDDLRINYDDLRVNYDDLRINYDDLRVNYDDLRVNYDDLRIN 418 9 9 GFASFVASNPNAPIRNAFYDALNSIEPVTGGGSVRNTLGYNVKNKNEFLSQYKFNLCFEN 361 PLASIDDLRV-------NYDDLRVNYDDLRVNYDDLRVN 1 MFQPLLDAYVESASIEKWASKSPPPLKIAVANWWGDEEIKEFKNSVLYFILSQRYTITLH ONPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYL 121 RMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKR RAPLYYDRLHHKAESVNDTTAPYKLKDNSLYALKKPSHCFKEKHPNLCAVVNDESDPLKR PLASIDDLRV---------NYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVN 181 GVVSFVASNANAPMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSBFLSQYKFNLCFEN SQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKBFVNVHDFNNFDBAIDYIKYLHTH 1 MFQPLLDAYVESASIEKMASKSPPPLKIAVANWWGDEEIKEFKKSVLYFIFSQRYTIALH Gaps 16; Length 501; Indels

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                                                                                                                                                        APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TILE OF INVEXTYON: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT PILING DATE: 2002-04-09
FURRENT PILING DATE: 2002-04-09
FRIOR APPLICATION NUMBER: RARLIER APPLICATION NUMBER: 09/092,315
PRIOR PLING DATE: EARLIER FILING DATE: 1998-06-05
PRIOR PLING DATE: EARLIER FILING DATE: 1997-06-05
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FASELSE FOR Windows Version 3.0
SOFTWARE: FASELSE FOR Windows Version 3.0
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86.5%; Pred. No. 3.2e-164;
ive 27; Mismatches 24; Indels 9;
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APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
                 419 YERLLSKATPLLELSQNTTSKIYRKAYQKSL 449
407 YERLLQNASPLLELSQNTSFKIYRKAYQKPI 437
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                                                                                                             Sequence 8, Application US/10120319
Publication No. US20020164749A1
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
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                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
ORGANISM: Helicobacter pylori
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 86.5
Matches 384; Conservative
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US-10-189-977-8
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GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: WICKLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: PUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/10/392,098
CURRENT APPLICATION NUMBER: US/09/7133,524A
PRIOR PILING DATE: 10300-12-07
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
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86.5%; Pred. No. 3.2e-164;
tive 27; Mismatches 24;
CURRENT APPLICATION NUMBER: US/10/189,977
CURRENT FILING DATE: 2002-07-03
PRIOR APPLICATION NUMBER: US/09/092,315
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1997-06-06
PRIOR PILING DATE: 1997-06-06
SOFTWARE: PRESQ ID NOS: 22
SOFTWARE: PRESSQ for Windows Version 3.0
SSQ ID NO 8
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Publication No. US20030166212A1
                                                                                                                                                                                                                                                                                                                           ORGANISM: Helicobacter pylori
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Matches 384; Conservative
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US-09-733-524-15
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                                                            Length 454;
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                                                              DB 4;
                                                           Query Match 86.7%; Score 2070.5; DB 4 Best Local Similarity 86.5%; Pred. No. 3.2e-164; Matches 384; Conservative 27; Mismatches 24;
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ORGANISM: helicobacter pylori fucosyltransferase
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; OTHER INFORMATION: Strain 11637 from NCTC11637
US-09-733-524-18
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                    ; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-10-392-098-8
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1Q ID NO 8
LENGTH: 454
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Sequence 15, Application US/09733524

Sequence 15, Application US/09733524

Patent No. US20020068347A1

GENERAL INFORMATION:

APPLICANT: The Governers of the University of Alberta, a Canada Corporation

APPLICANT: Taylor, Diane B.

APPLICANT: Taylor, Diane B.

APPLICANT: Ge, Zhongming

TITLE OF INVENTION: PUCOSYLITRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND

TITLE OF INVENTION: EXPRESSING THEM

FILE REFERENCE: 07254/049002

CURRENT PILING THEM

PRIOR FILING DATE: 2000-12-14

PRIOR FILING DATE: 1998-06-05

PRIOR FILING DATE: 1998-06-05

PRIOR FILING DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 20

SOFTMARE: PESTSEQ for Windows Version 4.0
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  DB 3; Length 454;
                                              25; Indels
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ORGANISM: Helicobacter pylori fucosyltransferase
86.5%; Score 2064.5; DB
86.3%; Pred. No. 1e-163;
ive 27; Mismatches 2
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                          86.3%;
  Query Match
Best Local Similarity 86.3%
Matches 383; Conservative
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Matches 394; Conservative
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                                                                                           | HPNAYLDMLYENPINALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFWWECDLD 359
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APPLICANT: Taylor, Diane E.
APPLICANT: Ge Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/04901
CURRENT PEPLICATION NUMBER: US/10/189,977
CURRENT FILING DATE: 2002-07-03
PRIOR APPLICATION NUMBER: US/09/092,315
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1997-06-06
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84.5%; Pred. No. 3.4e-163;
rative 13; Mismatches 28;
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SOFTWARE: FastSEQ for Windows Version 3.0
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; Sequence 5, Application US/10189977
; Publication No. US20030166211Al
; GENERAL INFORMATION:
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US-10-189-977-5
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Best Local Similarity 84.5*
Matches 394; Conservative
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MFQPLLDAFIESASIEKMVSKSPPPPLKIAVANWWGDEEIKEFKKSVLYFILSQRYAITL 60
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APPLICANT: TAYLOR, Diane E.

APPLICANT: TAYLOR, Diane E.

APPLICANT: TAYLOR, Diane E.

FILE REPERENCE: 07254/049001

CURRENT APPLICATION WUBBER: US/10/120,319

FURENT FILING DATE: 2002-04-09

PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-05

PRIOR PILING DATE: EARLIER FILING DATE: 1997-06-06

PRIOR FILING DATE: EARLIER FILING DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 22

SOFTWARE: PASELSER FILING DATE: 1907-06-06

NUMBER OF SEQ ID NOS: 22

LENGTH: 476
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Publication No. US20020164749A1
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ORGANISM: Helicobacter pylori
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Matches 394; Conservative
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US-10-120-319-5
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Search completed: August 11, 2006, 19:53:05 Job time : 109.675 secs

November 2005

Published_Applications Nucleic Acid and Published_Applications Amino Acid database searches now generate two sets of results each. The Published_Applications databases have been split into two parts to reduce the amount of time required for their daily updates. This results in more machine time being available for processing searches.

Newly published applications will appear in the Published_Applications_New databases; older published applications make up the Published_Applications_Main databases.

Searches run against Nucleic Acid Published_Applications produce two sets of results, with the extensions .rnpbm (Published_Applications_NA_New).

Searches run against Amino Acid Published_Applications produce two sets of results, with the extensions .rapbm (Published_Applications_AA_New).

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Sequence 5129, Ap
Sequence 5128, Ap
Sequence 5127, Ap
Sequence 44967, A
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52598, A
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3, Appli
48384, A
21, Appl
8, Appli
27, Appl
25, Appl
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4748, Ap
                                                                                    August 11, 2006, 19:47:49; Search time 16.9493 Seconds (without alignments) 1771.230 Million cell updates/sec
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FEMC Celetra_SIDS3/prodata/2/pubpaa/US06_NEW_PUB.pep:*
FEMC Celetra_SIDS3/prodata/2/pubpaa/US07_NEW_PUB.pep:*
FEMC Celetra_SIDS3/prodata/2/pubpaa/US08_NEW_PUB.pep:*
FEMC Celetra_SIDS3/prodata/2/pubpaa/PCT_NEW_PUB.pep:*
FEMC Celetra_SIDS3/prodata/2/pubpaa/US10_NEW_PUB.pep:*
FEMC Celetra_SIDS3/prodata/2/pubpaa/US11_NEW_PUB.pep:*
FEMC Celetra_SIDS3/prodata/2/pubpaa/US11_NEW_PUB.pep:*
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GenCore version 5.1.9
(c) 1993 - 2006 Biocceleration Ltd.
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US-10-953-349-5127

US-10-449-902-244967

US-11-197-712-244967

US-11-29-642-9

US-11-29-67-4748

US-10-537-642-24

US-10-537-642-24

US-10-537-642-24

US-10-537-642-24

US-10-537-642-26

US-10-537-642-26

US-10-537-642-11

US-10-537-642-11

US-10-537-642-11

US-10-537-642-11

US-10-537-642-11

US-10-537-642-11

US-10-537-642-11

US-10-537-641-20

US-10-537-411-20

US-10-527-411-94

US-10-527-411-98

US-10-527-411-98
                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                     Published Applications AA New:
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Maximum Match 100%
Listing first 45 summaries

    protein search, using sw model

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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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86, Appl	90, Appl	171, App	173, App				80, Appl		4, Appli	257, App	5110, Ap	11, Appl	13, Appl	14, Appl	18, Appl	75786, A	75785, A	3528, Ap	36, Appl
Sequence	Seguence	Sequence	Sequence	Sequence	Sequence	Seguence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence
US-10-527-411-86	US-10-527-411-90	US-10-527-411-171	US-10-527-411-173	US-10-527-411-104	US-10-527-411-110	US-10-471-571A-1894	US-10-527-411-80	US-10-527-411-112	US-10-126-915-4	US-10-505-928-257	US-10-471-571A-5110	US-10-521-401A-11	US-10-521-401A-13	US-10-521-401A-14	US-10-537-642-18	US-11-056-355B-75786	US-11-056-355B-75785	US-10-471-571A-3528	US-11-192-046-36
9	9	9	9	9	9	2	9 /	9	9	9	9 /	9	9	9 /	9 1	6 7	3 7	9	4 7
87	87	86	86	86	142	74	86	88	12	157	397	85	106	106	179	41	42	95	143
4.4	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.2	4.2	4.2	4.2	4.2	4.1	4.1	4.1	4.1
104	104	103	103	103	103	102.5	102.5	102.5	102	101.5	100.5	100.5	100.5	100.5	100	98.5	98.5	98.5	98.5
56	27	28	53	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

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APPLICANT: ALEXANDROV, Nickolai et al.

TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
TITLE OF INVENTION: ENCONDED THERBY
FILE REFERENCE: 2750-1579PUS2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: Patentin version 3.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 5128, Application US/10953349
Publication No. US20060107345A1
GENERAL INFORMATION:
APPLICANT ALEXANDROV, Nickolai et al.
TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRACMENTS AND CORRESPONDING POLYPEPTIDES
TITLE OF INVENTION: ENCONDED THERBY
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                                                                                                                                                                                                                                                                                                                                                                                                      6.2%; Score 148.5; DB 6; Length 302; 25.8%; Pred. No. 0.00015; tive 34; Mismatches 78; Indels 35
                  Sequence 5129, Application US/10953349
Publication No. US20060107345A1
GENERAL INFORMATION:
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184 FKKRPCKCSRGGSDTVYH 201
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Matches 51; Conserv
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APPLICANT: Bougueleret, Lydie
APPLICANT: Bougueleret, Lydie
APPLICANT: Bougueleret, Lydie
APPLICANT: Bougueleret, Lydie
APPLICANT: Jobert, Severin
FILE OF INVENTION: FULL-LENGTH HUMAN CDNAS ENCODING POTENTIALLY SECRETED PROTEINS
FILE REFERENCE: 78.U54.CIP
CURRENT APPLICATION NUMBER: US/11/197,712
CURRENT APPLICATION NUMBER: US/09/876,997
PRIOR APPLICATION NUMBER: US 09/731,872
PRIOR FILING DATE: 2000-12-07
PRIOR PLING DATE: 2000-12-07
PRIOR PAPLICATION NUMBER: US 60/187,470
PRIOR FILING DATE: 2000-03-06
PRIOR FILING DATE: 2000-03-06
PRIOR FILING DATE: 1999-12-08
NUMBER OF SEQ ID NOS: 482
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                            Sequence 44967, Application US/10449902

Publication No. US20060123505A1

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: National Institute of Agrobiological Sciences.
APPLICANT: Bio-oriented Technology Research Advancement Institution.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: Foundation for Advancement of International Science.
TITLE OF INVENTION: FULL.LENGTH PLANT CDNA AND USES THEREOF
FILE REFERENCE: MOA-A0205Y1-US
CURRENT APPLICATION NUMBER: US/10/449,902
CURRENT PAPLICATION NUMBER: JD 2002-203269
PRIOR FILING DATE: 2002-05-30
PRIOR FILING DATE: 2002-05-30
PRIOR FILING DATE: 2002-12-11
NUMBER OF SEQ ID NOS: 56791
SOFTWARE: PatentIN Ver. 2.1
LENGTH: 246
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Publication No. US20060130160A1
GENERAL INFORMATION:
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ORGANISM: Homo sapiens
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US-10-449-902-44967
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Publication No. US20060107345A1
GENERAL INFORMATION:
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GENERAL INFORMATION:
TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
TITLE OF INVENTION: ENCONDED THERBY
FILE REPERBNCE: 2750-1579PUS2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: PAtentin version 3.3
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6.2%; Score 148.5; DB 6; Length 338;
Best Local Similarity 25.8%; Pred. No. 0.00018;
Matches 51; Conservative 34; Mismatches 78; Indels 35
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Best Local Similarity 25.8%; Pred. No. 0.00017;
Matches 51; Conservative 34; Mismatches 78
FILE REFERENCE: 2750-1579PUS2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT PILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: PATENTIN VETSION 3.3
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US-10-953-349-5128
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US-10-953-349-5127
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us-10-764-212-16.rapbn

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RESULT 8
US-11-293-697-4748
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                                                                                                              12;
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                                                                                                                                                                                                   75 GKPERKEFKSSLQDGHTKMEEAPTHLNSFLKKEGLTFNRKRKWELDSYPIMLWWSPLTG 134
                                                                                                                                                                                                                                               78 ARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYYDRLHHKABSVN 137
                                                                                                                                                                                                                                                                                        135 ETGRLGQCGADACFFT-INRTYLHHHMTKAFLFYGTDFNIDSLPLP----RKAHHDWAVF 189
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     227 - EFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNP--KEFVNVHD 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          190 ANAPMRNAFYDALNSIEPV----TGGGSVKNTLGYNVKNKSEFLSQYKFNLCFENSQGY 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   230 SNCGARNFRLQALEMLESLDVKIDSYGSCHRNHDG--KVDKVETLKRYKFSLAFENSNEE 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKE--FVNVHDFNNFDEAIDYIKYLHTHPN 302
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                                                                                                                                                          -----NEPSDLVPSNPLGS
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                                                                                                              Gaps
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Bublication No. US20060123505A1
GENERAL INFORMATION:
APPLICANT: National Institute of Agrobiological Sciences.
APPLICANT: Bio-oriented Technology Research Advancement Institution.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: Foundation for Advancement of International Science.
IITLE OF INVENTION: FULL-LENGTH PLANT CDNA AND USES THEREOF
                                                                                                              62;
                                                                                                                                                                                                                                                                                                                                      138 DTTSP---YKLKDNSLYTLKKPSHQF-KENHPNLCAVVNDESDPLKR----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 6; Length 513;
                                                                  Length 406;
                                                              Query Match 5.7%; Score 137; DB 7; Length 40¢ Best Local Similarity 24.5%; Pred. No. 0.0021; Matches 80; Conservative 43; Mismatches 142; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 5.3%; Score 127.5; DB 6; Length 5
Best Local Similarity 26.1%; Pred. No. 0.017;
Matches 40; Conservative 33; Mismatches 55; Indels
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                                                                                                                                                          35 GDEEIKEFKKSVLYPIFSQRYTIALHQNP---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        284 FNNFDEAIDYIKYLHTHPNAYLDMLYE 310
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CURRENT PEPLICATION NUMBERS: US/0/449,902
CURRENT FILING DATE: 2003-05-29
PRIOR APPLICATION NUMBER: UP 2002-203269
PRIOR PLING DATE: 2002-05-30
PRIOR APPLICATION NUMBER: UP 2002-381870
PRIOR FILING DATE: 2002-11-11
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SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 52598
LENGTH: 513
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US-10-449-902-52598
; LOCATION: -31..-1
US-11-197-712-284
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       156 PSHQPKENHPNLCAVVNDESDPLK-----RGVVSFVASNANAPMRNAFYDALNSIEP 207
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             260 IPIYWGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKYLHTHPNAYLDMLYENPLNALDGK 319
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                                                                                                                                                                                                               APPLICANT: The United States of America as Represented by the APPLICANT: The United States of America as Represented by the APPLICANT: Secretary of the Navy APPLICANT: Setter, Alessandro APPLICANT: Setter, Alessandro APPLICANT: Setter, Doolan, Danise L. APPLICANT: State, Danise L. APPLICANT: State, Danise L. APPLICANT: State, Danise L. APPLICANT: Southwood, Scott TITLE OF INVENTION: PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE FILE REPRENCE: EPI-103X CURRENT APPLICATION NUMBER: US /10/537,642 CURRENT PILING DATE: 2005-06-06 PRIOR PILING DATE: 2005-12-06 PRIOR PILING DATE: 2002-12-06 PRIOR PILING DATE: 2002-11-06 PRIOR PRIOR PILING DATE
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22.0%; Pred. No. 0.25;
tive 45; Mismatches 145; Indels 105; Gaps
                                                                                                                                                                                                    The Unit of States of America as Represented by the Secretary of the Navy Sette, Alessandro
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; Publication No. US20060105376A1
; GENERAL INFORMATION:
; APPLICANT: HELIX RESEARCH INSTITUTE
; TILLE OF INVENTION: Novel full length cDNA
; FILE REFERENCE: H1-A0106
; CURRENT APPLICATION WUMBER: US/11/293,697
; CURRENT PILING DATE: 2005-12-05
; PRIOR FILING DATE: 2002-03-28
Sequence 9, Application US/10537642
Publication No. US20060165719A1
GENERAL INFORMATION:
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Best Local Similarity 22.0%
Matches 83; Conservative
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446 E----ENEKRNFNYYDTCKNIWNYQICKDDNNLLANNWEKFFFFFSNVNNWKWYECNNWN 500
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                                                                                                                                                                                                                                                                                                               620 NPIMNNINND------QINNLSIPNNKNBDNNEINHDD--SNDDDSNSSHITLN 665
                                                                                                                                                       DIIYHKSSISFMWECDLDEPLASIDDLRV----NYDDLRVNYDDLRVNYDD-----LRVN 392
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|------CNNFNKNINNNI 574
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                                                                                                             HDFNNFDEAIDYIKYLHTHPNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFFKTILEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Epimmune, Inc.
APPLICANT: Epimmune, Inc.
APPLICANT: Epimmune, Inc.
APPLICANT: Benefates of America as Represented by the
APPLICANT: Secretary of the Navy
APPLICANT: Secretary of the Navy
APPLICANT: Carucci, Daniel J.
APPLICANT: Sidney, John
APPLICANT: Southwood, Scott
TITLE OF INVENTION: PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE
FILE REPRENCE: EPI-103X
CURRENT FILING DATE: 2005-06-06
FRIOR APPLICATION NUMBER: US 60/431,494
PRIOR APPLICATION NUMBER: US 60/431,494
PRIOR FILING DATE: 2002-12-06
NUMBER OF SEQ ID NOS: 1161
SOFTWARE: Patentin version 3.2
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                                                                                                                                                                                                                                                                                                                                                                                                                 393 YDDLRVNYDDLRVNYERLLQNASPLLELSQNTSFKIYRKAYQ-----KPIKN 439
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                               536 LNVNNFTSSYNFPNINNMDSNIYNHTT
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Publication No. US20060165719A1
GENERAL INFORMATION:
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; ORGANISM: Plasmodium falciparum
US-10-537-642-24
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APPLICANT: Epinmune, Inc.
APPLICANT: Epinmune, Inc.
APPLICANT: File United States of America as Represented by the
APPLICANT: Sectex-Fary of the Navy
APPLICANT: Sectex, Alessandro
APPLICANT: Carucci, Daniel J.
APPLICANT: Carucci, Daniel J.
APPLICANT: Southwood, Scott
TITE OF INVENTION: PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE
TITE OF INVENTION: PAPLICATION NUMBER: US/10/537,642
CURRENT APPLICATION NUMBER: US 60/431,494
PRIOR APPLICATION NUMBER: US 60/431,494
PRIOR PILING DATE: 2002-12-06
NUMBER OF SEQ ID NOS: 1161
SOFTWARE: PatentIn version 3.2
SEQ ID NO 10
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SEQ ID NO 10
LENTH: AND ADDERMENT OF SEQ ID NOS: 1161
SEQ ID NO 10
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                                                                                                                                                                                                                                                                                                    5.1%; Score 122; DB 7; Length 336; 25.1%; Pred. No. 0.026;
                                                                                                                                                                                                                                                                                                                                                                                  98; Indels
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                                                                                                                                                                                                                                                                                                                                                                              41; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                  68; Conservative
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   NUMBER OF SEQ ID NOS: 5458
SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                       TYPE: PRT
ORGANISM: Homo sapiens
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Matches 75; Conserv
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Best Local Similarity
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                                                                          SEQ ID NO 4748
LENGTH: 336
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TGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYYDRLHHKAESVNDTTSPYKLKDNSLYT 152
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APPLICANT: National Institute of Agrobiological Sciences.
APPLICANT: Bio-oriented Technology Research Advancement Institution.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: Foundation for Advancement of International Science.
ITILE OF INVENTION: FULL-LENGTH PLANT CDNA AND USES THEREOF
FILE REFERENCE: MOA-A0205Y1-US
CURRENT APPLICATION NUMBER: US/10/449,902
CURRENT APPLICATION NUMBER: US/202-203269
PRIOR FILING DATE: 2003-05-29
PRIOR FILING DATE: 2002-05-30
PRIOR FILING DATE: 2002-05-30
PRIOR FILING DATE: 2002-05-30
PRIOR FILING DATE: 2002-012-11
NUMBER OF SEQ ID NOS: 56791
                    308 LYENPLNALDGKAY--FYQDLSFKKILAFF-KTILEN--DTIYHK-SSTSFMWECDLDEP
                                                              515 VYNFLLKALIQRYEYSNILKSIRNSDLLNFFNSSİIQNLINFLCQKISQDVFIIEYD-DMP
                                                                                                             362 LASIDDLRVNYDD-LRVNYD-----DLRVNYDDLRV------NYDDLRVNYDDLR
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4.6%; Score 109; DB 6; Length 615;
Best Local Similarity 19.8%; Pred. No. 0.75;
Matches 92; Conservative 73; Mismatches 174; Indels 126;
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                                                                                                                                                                                                                                                                                                                                                        Sequence 48384, Application US/10449902
Publication No. US20060123505A1
GENERAL INFORMATION:
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US-10-449-902-48384
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LENGTH: 615
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680 NCNNYEKYINNMSFINNKESSNINKDDVYNGNMDNHNHHVNNNNTLCNTSLSDLCSNNSS 739
                                            243 GYGYVTEKILDAYFSHTIPIYWGSPSVAKD-----FNPKEFVNVHDFNNFDEAIDYIK 295
                                                                     740 ESKKQEAVCLMKNDTHDI-----IKNVSNNMKRFSLYMNPINNNNNNNNNDDTSNNVQ 794
                                                                                                                                  296 YLHTHPNAYL-----DMLYENPLNALDGKAYFYQDLS---FKKILAFFKTILENDTIYH 346
                                                                                                                                                            855 KUVNEIMYSKEITNMNNINRSSDEYITNNNMDNDNNIMNYTLYPWKENKPKNVDMLNIYK 914
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   192 APMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYK-FNLCFENSQGYGYVTEK
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APPLICANT: Epimmune, Inc.
APPLICANT: The United States of America as Represented by the
APPLICANT: Secretary of the Navy
APPLICANT: Sette, Alessandro
APPLICANT: Doolan, Denise L.
APPLICANT: Carucci, Daniel J.
APPLICANT: Southwood, Scott
TITLE OF INVENTION: PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE
FILE REPERENCE: EPI-103X
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22.6%; Pred. No. 4.7;
tive 61; Mismatches 159; Indels 106;
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CURRENT FILING DATE: 2005-06-06
PRIOR PILING DATE: 2005-12-06
NUMBER OF SEQ ID NOS: 1161
SOFTWARE: Patentin version 3.2
LENGTH: 2404
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Publication No. US20060165719A1
GENERAL INFORMATION:
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; ORGANISM: Plasmodium falciparum
US-10-537-642-3
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Best Local Similarity
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APPLICANT: Carucci, Denise L.
APPLICANT: Carucci, Denise L.
APPLICANT: Southwood, Scott
TITLE OF INVENTION: PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE
FILE REFERENCE: EPT-103X
CURRENT APPLICATION NUMBER: US/10/537,642
CURRENT FILING DATE: 2005-06-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4.5%; Score 107; DB 6; Length 2024;
20.2%; Pred. No. 6.4;
tive 74; Mismatches 200; Indels 116;
                                                                                                                                            APPLICANT: Epimmune, Inc.
APPLICANT: The United States of America as Represented by the APPLICANT: Secretary of the Navy
APPLICANT: Sette, Alessandro
508 RSGDVKSCKVARKTADAQPKELAKELKPLLTSLQSSSQSYQIWPK 552
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PRIOR APPLICATION NUMBER: US 60/431,494
PRIOR FILING DATE: 2002-12-06
NUMBER OF SEQ ID NOS: 1161
SOFTWARE: PatentIn version 3.2
                                                                                     Sequence 21, Application US/10537642
Publication No. US20060165719A1
GENERAL INFORMATION:
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1132 LLDHSDDSS 1140
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Matches 99; Conserva
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LENGTH: 2024
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RESULT 14 US-10-537-642-8

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                                                                                                        APPLICANT: Epimmune, Inc.
APPLICANT: Epimmune, Inc.
APPLICANT: The United States of America as Represented by the
APPLICANT: Secretary of the Navy
APPLICANT: Secretary of the Navy
APPLICANT: Secrete, Jensel J.
APPLICANT: Carucci, Daniel J.
APPLICANT: Sidney, John
APPLICANT: Sidney, John
APPLICANT: Southwood, Scott
TITLE OF INVENTION: PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE
FILE REFERENCE: EPI-103X
CURRENT APPLICATION NUMBER: US/10/537,642
CURRENT FILING DATE: 2005-06-06
PRIOR PLLING DATE: 2005-06-06
PRIOR PLLING DATE: 2002-12-06
NUMBER OF SEQ ID NOS: 1161
SOFTWARE: Patentin version 3.2
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4.4%; Score 106; DB 6; Length 954;
Best Local Similarity 18.9%; Pred. No. 2.5;
Matches 95; Conservative 75; Mismatches 170; Indels 162;
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Publication No. US20060165719A1
GENERAL INFORMATION:
Sequence 8, Application US/10537642
Publication No. US20060165719A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ; ORGANISM: Plasmodium falciparum
US-10-537-642-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-10-537-642-27
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22;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        269 VAKDFNPKEFVNVHDFNNFDEAIDYIKYLHTHPNAYLDMLYENPLNALDGKAYFY--QDL 326
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                                                                                                                                                    APPLICANT: Sidney, John
APPLICANT: Sidney, John
APPLICANT: Southwood, Scott
TITLE OF INVERTION: PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE
FILE REPERENCE: EPI-103X
CURRENT APPLICATION NUMBER: US/10/537,642
CURRENT PILING DATE: 2005-06-06
FRIOR PILING DATE: 2005-12-06
NUMBER OF SEQ ID NOS: 1161
SOFTWARE: Patentin version 3.2
SEQ ID NO 27
LENGTH: 1464
TYPE: PRT
CRANISM: Plasmodium falciparum
US-10-537-642-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
4.4%; Score 106; DB 6; Length 1464;
Best Local Similarity 20.0%; Pred. No. 4.8;
Matches 87; Conservative 60; Mismatches 159; Indels 128; Gaps
Secretary of the Navy
                                      Sette, Alessandro
Doolan, Denise L.
Carucci, Daniel J.
Sidney, John
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Search completed: August 11, 2006, 19:54:05 Job time : 18.9493 secs

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GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                   Copyright
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OM protein - protein search, using sw model

August 11, 2006, 19:30:38 ; Search time 116.066 Seconds Run on:

(without alignments)
1733.289 Million cell updates/sec

US-10-764-212-18

2362 1 meqplildafiesasikkmpl......yhkslplirairrwykkigl 440 Perfect score: Sequence:

BLOSUM62 Scoring table: 2589679 seqs, 457216429 residues Searched:

Gapop 10.0 , Gapext 0.5

2589679 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

summaries Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 su

geneseqp1990s:* geneseqp2000s:* geneseqp2001s:* geneseqp2002s:* geneseqp2003as:* geneseqp2003bs:*geneseqp2004s:*geneseqp2005s:* geneseqp1980s:* A_Geneseq_8:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

geneseqp2006s:*

10:

SUMMARIES

	Description	147 Helicobac	883 H. pylori	Adj77814 Helicobac	349 Alpha-1,3	135 Helicobac			345 Alpha-1,3			_			Adj27347 Alpha-1,3		Ï	Ä	He	355 Alpha-1,3	141 Helicobac	885 H. pylori		257 Helicobac
	escr	Aeb70147	bg30	dj 77	1 j27	eb70	5g30	4 j77	Adj27345	Aeb70131	5	Abg30884	3W8	1 j77	1)27	eb70	933	93	3,77	Adj27355	8 20 10	Abg30885	<u>s</u> 570	Abu52257
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*	'	100.0	99.4	85.0	85.0	85.0	84.9	84.6	84.6	84.6	84.0	.83.9	83.7	83.4	83.4	83.4	83.4	83.0	79.6	79.6	79.6	79.1	78.8	78.0
	Score	2362	2347	2007.5	2007.5	2007.5	2006.5	1999	1999	1999	1984.5	1982.5	1978	1970.5	1970.5	1970.5	1970	1960.5	1879.5	1879.5	1879.5	1869	1861	1842.5
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Aeb70197 H. pylori	Aeb70195 H. pylori	Aeb70149 Helicobac	Adj77816 Helicobac	Adj27351 Alpha-1,3	Aeb70137 Helicobac	Aeb70199 H. pylori	Aeb70204 H. pylori	Aeb70203 H. pylori	Aeb70193 H. pylori	Aeb70201 H. pylori	Aeb70202 H. pylori	Aeb70206 Helicobac	Aeb70205 H. pylori	Aeb70211 Helicobac	Aeb70154 H. pylori	Aeb70212 Helicobac	Abu51720 Helicobac	Abu51151 Helicobac	Abu51509 Helicobac	Abu51153 Helicobac	included to the section of
AEB70197	AEB70195	AEB70149	ADJ77816	ADJ27351	AEB70137	AEB70199	AEB70204	AEB70203	AEB70193	AEB70201	AEB70202	AEB70206	AEB70205	AEB70211	AEB70154	AEB70212	ABU51720	ABU51151	ABU51509	ABU51153	4444444
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377	391	456	277	277	277	256	246	246	231	245	247	250	247	559	227	545	146	169	130	124	110
75.9	75.6	73.6	50.3	50.3	50.3	48.5	48.5	48.3	47.0	46.9	46.4	45.6	44.2	43.3	42.0	37.0	25.0	24.0	22.5	21.0	000
1793	1786.5	1737.5	1187.5	1187.5	1187.5	1146	1145.5	1141.5	1111	1107	1096	1077.5	1043	1022.5	991	875	591	567.5	530.5	496.5	7.73
24	25	56	27	28	53	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	4

ALIGNMENTS

Helicobacter pylori fucosyl transferase, FutA, protein, SEQ ID NO: 18. Bezila DJ; Fucosyltransferase; protein production; enzyme Simala-Grant J, Taylor D, Johnson KF, /note= "Encoded by TTT" Location/Qualifiers AEB70147 standard; protein; 440 AA. Helicobacter pylori; strain 802. (NEOS-) NEOSE TECHNOLOGIES INC. (UYAL-) UNIV ALBERTA. 22-JAN-2004; 2004US-00764212. 22-JAN-2004; 2004US-00764212. (first entry) WPI; 2005-521417/53. N-PSDB; AEB70146. Misc-difference 112 US2005164338-A1. 06-OCT-2005 28-JUL-2005. AEB70147;

New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids. Claim 1; SEQ ID NO 18; 97pp; English.

The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucosos residue from a donor substrate to an acceptor substrate. The fucosyltransferase polynucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.

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301 YLDMLYENPLMTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNPFVFYRDLMEPLVSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421 YHKSLPLLRAIRRWVKKLGL 440
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                                                                                                                                                                                                                                                 YGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDBAIDYVRYLHTHPNA 300
                                                                                                                                                                                                                                                              241 YGYVTEKIIDAYFSHTIPIYWGSPSVAKOFNPKSFVNVHDFKNFDEAIDYVRYLHTHPNA 300
                                                                                                                                                                                                                                                                                            YLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPFVFYRDLNEPLVSI 360
                                                                                                                                                                                                                                                                                                        YLDMLYENPLATLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNFFVFYRDLAEPLVSI 360
                                                                                                                                                                                                                                                                                                                                      DDLRADYNNLRADYNNLRADYNNLRADYNNLRADYDRLLQNRSPLLELSQNTTFKIYHKA 420
                                                                                                                                                                                                                                                                                                                                                   DDLRADYNNLRADYNNLRADYNNLRADYNNLRADYDRILLONRSPLIELSONTTFKIYHKA 420
                                                                                                                                         61 NEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYLRMP 120
                                                                                               9
                                                                                          1 MFQPLLDAFIESASIKKMPLSYPPLKIAVANWWGGAEBFKKSAMYFILSQRYTITHQNP
                                                                                                                    NEPSDLVFGSP1GAARKILSYQNTKRVFYAGENEVPNFNLFDYA1GFDELDLRDRYLRMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Enzyme, fucT, alphal, 3 fucosyltransferase, oligosaccharide, Lex; Ley; sLex; Helicobacter pylori infection, malignant cell; mammalian tumour.
                                                                                                                                                                                                         SFVASNPNAPKRNAFYDALNSIEPVTGGGSVKNTLGYKVGNKNEFLSQYKFNLCFENSQG
                                                                          1 MPQPLLDAFIESASIKKMPLSYPPLKIAVANWWGGAEEFKKSAMYFILSQRYTITLHQNP
                                                                                                                                                              LYYDRLHHKAESVNDTTAPYKI KPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKRGFA
                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
                                                     ö
                               Length 440;
                                                     Indels
                               100.0%; Score 2362; DB 9;
100.0%; Pred. No. 2.7e-208;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H. pylori alphal, 3 fucosyltransferase #3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABG30883 standard; protein; 440 AA
                                                                                                                                                                                                                                                                                                                                                                                            YHKSLPLLRAIRRWVKKLGL 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Helicobacter pylori; strain 802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             98US-00092315.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-DEC-2000; 2000US-00733524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                          Best Local Similarity 100.
Matches 440; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (revised)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       laylor DE, Ge Z;
            Sequence 440 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US2002068347-A1
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21-OCT-2002
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                                 Query Match
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ABG30883
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The invention relates a purified transmembrane segment-free alpha 1,3-
the cooyltransferase polypebtide, having a repeat of the sequence: X. 1-X. 2.

Leu-Arg-X. 3-X. 4-Tyr, where X. 1, X. 2 and X. 4 is App or Asn.; and X. 3 is

Leu-Arg-X. 3-X. 4-Tyr, where X. 1, X. 2 and X. 4 is App or Asn.; and X. 3 is

Leu-Arg-X. 3-X. 4-Tyr, where X. 1, X. 2 and X. 4 is App or Asn.; and X. 3 is

Leu-Arg-X. 3-X. 4-Tyr, where X. 1, X. 2 and X. 4 is App or Asn.; and X. 3 is

Leu-Arg-X. 3-X. 4-Tyr, where X. 1, X. 2 and X. 4 is App or Asn.; and X. 3 is

Is conjecting the complement or fragment), a vector containing the mucleic acid or vector, an antibody which

conducing transmembrane segment-free alphal. 3- fucosyltransferase,

comprising a host cell modified with the mucleic acid or its

comprising a host cell modified with the mucleic acid or its

comprising the produced oligosaccharides, such as Lex, Ley or SLex, by

contacting the produced oligosaccharides, such as Lex, Ley or SLex, by

contacting the bost cell with a substrate, to produce oligosaccharides

and purifying the bost cell with a substrate, to produce oligosaccharides

contacting the bost cell with a substrate, to produce oligosaccharides

and purifying the obtained oligosaccharides. The nucleic acid is useful

contacting the bost cell with a substrate, to produce oligosaccharides

contacting the bost cell with a substrate, to produce oligosaccharides

contacting the bost cell with a substrate, to produce oligosaccharides

contacting the bost cell with a substrate, to produce oligosaccharides

contacting the bost cell with a substrate, to produce oligosaccharides

contacting the bost cell with a substrate, to produce oligosaccharides

contacting the bost cell with a substrate, to produce oligosaccharides

contacting the bost cell with a substrate, to produce oligosaccharides

contacting the bost cell with a substrate, to produce oligosaccharides

contacting the bost cell with a substrate, to produce oligosaccharides

contacting the protein in a sample. The presenc
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 MFQPLLDAFIESASIKKMPLSYPPLKIAVANWWGGAEEFKKSAMYFILSQRYTITLHQNP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             61 NEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNLFDYAIGFDELDLKDRYLRMP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     YGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDYVRYLHTHPNA
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Claim 6; Fig 6; 37pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 440 AA;
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YLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILBNDTIYHNNFVFYRDLNEPLVSI

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241 SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAQDFNPKSFVNVCDFKDFDBAIDHVRYLHTH 300
                                                                                                                                                                                                                                                                    421 DLRVNCDDLRVNYDDLRVNYERLLQNASPLIELSQNTTFKIYRKAYQKSLPLLEAARKLI 480
                                                                                                                                                                                      358 VSIDDLRADYNNIRADYNNIRADYNNIRADYNNIRADYD------ 396
                                                                                                                                                                                                         -------RLLQNRSPLLELSQNTTFKIYHKSLPLLRAIRRWV 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This sequence represents an alpha-1,3/4-fucosyltransferase protein which was used in the method of the invention for producing a fucosylated glycoprotein. The method involves contexting a recombinant fucosyltransferase protein with a mixture comprising a donor substrate which comprises a fucosyl residue, and an acceptor substrate on a glycoprotein, under conditions such that the fucosyltransferase protein catalyzes the transfer of the fucosy essidue from a donor substrate the acceptor substrate on the glycoprotein. The method is useful for producing fucosylated glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate and acceptor substrate on glycoprotein.
178 GFASFVASNPNAPKRNAFYDALNSIEPVTGGGSVKNTLGYKVGNKNEFLSQYKFNLCFEN
                                                            SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDYVRYLHTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alpha-1; 3/4-fucosyltransferase; glycoprotein; fucosyltransferase;
fucosyl; fucose.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Helicobacter pylori; strain 1218 FutB.
                                                                                                                                                                                                                                                                                                                                                                                                                                ADJ27349 standard; protein; 485 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Alpha-1,3/4-fucosyltransferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (NEOS-) NEOSE TECHNOLOGIES INC.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
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N-PSDB; ADJ27348.
                                                                                                                                                                                                                                                                                                                    KKLGL 440
                                                                                                                                                                                                                                                                                                                                                  481 KKLGL 485
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This invention relates to novel isolated polynucleotides and the encoded polypeptides thereof, which are related to the fucosyltransferase enzymes (Puth and PutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycoproteins and glycolipids with the desired oligosaccharide moieties (i.e. by transfer of a fucose residue to Nacctylglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial fucosyltransferase is unaffected by the sialyation estates of the acceptor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ONPNEPSDLVFGSPIGAARKILSYONTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYL 117
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New isolated polynucleotide encoding fucosyltransferase protein, useful for synthesizing oligosaccharide moiety on a protein or lipid that is unglycosylated in its native form or for synthesizing glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sugar, as opposed to the mammalian homologue, and furthermore, bacterially expressed enzymes offer a large cost saving relative to mammalian expression systems. This polypeptide sequence is an H. pylori strain 1218 FutB protein sequence of the invention.
                                                                                                                                                                                                                        FutA, FutB, alpha 1-3/4 fucosyltransferase, glycoprotein, glycolipid, fucose, N-acetylglucosamine, glycoconjugate, enzyme.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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                                                                                                                                                                                         Helicobacter pylori strain 1218 FutB protein SeqID 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 16; SEQ ID NO 6; 72pp; English.
                                                                                              ADJ77814 standard; protein; 485 AA
                   440
                                                                                                                                                                                                                                                                                                                                                                                                                                                (NEOS-) NEOSE TECHNOLOGIES INC
421 YHKSLPLLRAIRRWVKTGL
                                                                                                                                                                                                                                                                                                                                                                    23-JUL-2003; 2003WO-US023057.
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Matches 379; Conservative 3
                                                                                                                                                            (first entry)
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                                                                                                                                                            06-MAY-2004
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                                                                                                                           ADJ77814;
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RESULT 6
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                                                                             QNPNEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYL 117
                                                          9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New isolated fucosyltransferase polynucleotides and polypeptides, useful
                                                       1 MFQPLLDAYIESASIEKITSKSPPPLKIAVANWWGDEEVEEFKKNILYFILSQHYTITLH
                                                                                         QNPNEPSDLVFGSPIGSARKILSYQNAKRVFYTGENESPNFNLFDYAIGFDELDFRDRYL
                                                                                                                                                                                                           SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAQDFNPKSFVNVCDFKDFDEAIDHVRYLHTH
                                                                                                                                                                                                                                                 PINAYLDMLYENPLNTLDGKAYFYONLSFKKILDFFKTILENDTIYHDNPFIFYRDLNBPL
                                                                                                                                                                                                                                                                                        RMPLYYDRLHHKAESVNDTTAPYKI KPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKR
                                                                                                                               RMPLYYDRIHHKAESVNDTTSPYKLKDDSLYALKKPSHHFKENHPNLCAVVNNRSDPLKR
                                                                                                                                                                     SQGYGYVTEKIIDAYPSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNPDEAIDYVRYLHTH
                                                                                                                                                                                                                                       PNAYLOMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPFVFYRDLNEPL
                                                                                                                                                           GFAS FVASNPNAPKRNAFYDALNS I EPVTGGGSVKNTLGYKVGNKNEFLSQYKFNLCFEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
                                       MFQPLLDAFIESASIKKM-PLSYPPLKIAVANWWGG--AEEFKKSAMYFILSQRYTITLH
                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Helicobacter pylori fucosyl transferase, FutB, protein, SEQ ID NO:
                    45;
 Length 485;
                    27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bezila DJ
  DB 8;
                                                                                                                                                                                                                                                                              VSIDDLRADYNNLRADYNNLRADYNNLRADYNNLRADYD-
 ;; Score 2007.5; DB 8
;; Pred. No. 1.3e-175;
34; Mismatches 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pucosyltransferase; protein production; enzyme
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vuery match
Best Local Similarity 78.1%;
Matches 379; Conservative 3
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                                                                                                                                      The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polymucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.
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sLex; Helicobacter pylori infection, malignant cell; mammalian tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GFASFVASNPNAPKRNAFYDALNSI EPVTGGGSVKNTLGYKVGNKNBFLSQYKFNLCFEN
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for synthesizing oligosaccharides, glycoproteins, or glycolipids
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DB 9; Length 485;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             85.0%; Score 2007.5; DB 9; Length
78.1%; Pred. No. 1.3e-175;
Live 34; Mismatches 27; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VSIDDLRADYNNLRADYNNLRADYNNLRADYNNLRADYD-
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                                                                     Example 1; SEQ ID NO 6; 97pp; English
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Best Local Similarity 78.1%
Matches 379; Conservative
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(first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 485 AA;
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21-OCT-2002
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Sequence 486 AA;
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                                                                                                                                                                                                                                                                                                                                                              The invention relates a purified transmembrane segment-free alpha 1.3-

fucosyltransferase polypeptide, having a repeat of the sequence: X_1-X_2-

fucusyltransferase polypeptide, having a repeat of the sequence: X_1-X_2-

Leu-Axgrx 3.x 4.Tyr, where X 1, X_2 and X 4 is Asp or Asn; and X 3 is

11e, Val Or Ala. Also included are the nucleic acid encoding the protein

(including its complement or fragment), a vector containing the nucleic

acid, a host cell modified with the nucleic aspects

contacting transmembrane segment-free alphal, 3- fucosyltransferase,

comparising a host cell modified with the nucleic acid or its

producing fucosylated oligosaccharides, such as Lax, Ley or SLex, by

contacting the protein with a substrate such as Lax, Ley or SLex, by

contacting the protein with a substrate, to produce oligosaccharides

and purifying the obtained oligosaccharides, or by culturing the cell,

contacting the host cell with a substrate, to produce oligosaccharides

and purifying the obtained oligosaccharides. The nucleic acid is useful

a probe for detecting the nucleic acid, by contacting a sample with a

nucleic acid probe that hybridises to alphal,3-fucosyltransferase

a probe for detecting hybridisation of the probe; or by

amplitying the nucleic acid using polymerase chain reaction (PCR). The

host cell is useful for producing a transmembrane segment-free alphal,3-

cup peptide under conditions which allow expression and secretion of the

cor peptide under conditions which allow expression and secretion of the

cor peptide under conditions which allow expression and secretion in the

sample is indicative of infection by Helicobacter pylori or the presence

of mailgnant cells. The antibody is also useful as

for detecting the protein in a sample. The presence of the protein in the

sample is indicative of infection by Helicobacter pylori or the presence

of mailgnant cells. The antibody is also useful as

fucosyltransferase gene product activity. The nucleic acid is useful

fucosyltransferase can and for ti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ONPNEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYL 117
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fucosyltransferase gene regulation. Oligosaccharides synthesised using the protein or cell are useful in the development of assays to detect ammalian tumours. The present sequence represents an H. pylori alphal, 3 fucosyltransferase encdoed by the fucT gene. (Updated on 29-AUG-2003 to standardise OS field)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                               Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84.9%; Score 2006.5; DB 5; Length 454; 82.6%; Pred. No. 1.5e-175; Live 35; Mismatches 27; Indels 17;
                                                                                                                                                                                                                                                Example 3; Fig 6; 37pp; English
                                07-DEC-2000; 2000US-00733524.
                                                                98US-00092315.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             375; Conservative
                                                                                                (UYAL-) UNIV ALBERTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                Ge 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 454 AA;
                                                                05-JUN-1998;
06-JUN-2002
                                                                                                                              raylor DE,
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Best Local S:
Matches 375,
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셤
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fucosyltransferase is unaffected by the siallyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, bacterially expressed enzymes offer a large cost saving relative to mammalian expression systems. This polypeptide sequence is an H. pylori strain 1182 FutB protein sequence of the invention.
                                                                                                                               241 SQGYGYVTEKIIDAYPSHTIPIYWGSPSVAKOFNPKSFVNVHDFNNFDEAIDYVRYLHTH 300
                                                                                                                                                                                                                                                                                                      301 PNAYLDMLYENPLATLDGKAYFYQNLSFKKILDFFKTILENDTIYHNHPFIFYRDLNEFL 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This invention relates to novel isolated polynucleotides and the encoded polypeptides thereof, which are related to the fucosyltransferase enzymes (Puth and Puth) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycoproteins and glycolipids with the desired oligoaccharide moleties (i.e. by transfer of a fucose residue to N-acetylglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial
181 GFASFVASNANAPMRNAFYDALNSIEPVTGGGAVKNTLGYKVGNKSEFLSQYKFNLCFEN 240
                                                                                                                                                                                                                                                                                                                                                                                                                                  403
                                                                                                                                                                                                                                                          PNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPFVFYRDLNEPL 357
                                                                                                                                                                                                                                                                                                                                                                                                                                  VSIDDLRADYNNLRADYNNLRADYNNLRADYNNLRADYD--------RLLQNRS
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                                                                                   SQGYGYVTEKIIDAYFSHTIPIYMGSPSVAKDFNPKSFVNVHDFKNFDEAIDYVRYLHTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Futh, Futh, Puth alpha 1-3/4 fucosyltransferase; glycoprotein; glycolipid, fucose; N-acetylglucosamine; glycoconjugate; enzyme.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Helicobacter pylori strain 1182 FutB protein SeqID 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421 PLLELSQNTSFKIYRKIYQKSLPLLRVIRRWVKK 454
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         404 PLLELSQNTTFKIYHKAYHKSLPLLRAIRRWVKK 437
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADJ77810 standard; protein; 486 AA
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DB 8;

84.6%; Score 1999;

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acceptor substrate on glycoprotein.
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                                                                                                                               Sequence 486 AA;
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Matches
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                                                                                                              :|| :|| :|| :|| 361 ISIDDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNY
                                                                                                     118 RMPLYYDRLHHKAESVNDTTAPYKIKPDSLYTLKKPSHHPKEKHPHLCAVVNDESDPLKR
                                                                                                                                        GFASFVASNPNAPKRNAFYDALNSIEPVTGGGSVKNTLGYKVGNKNEFLSQYKFNLCFEN
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                                       ONPNEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYL
                             1 MFQPLLDAFIESASIKKM-PLSYPPLKIAVANWWGG--ABEFKKSAMYFILSQRYTITLH
            Gaps
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            46;
            Indels
 . 8.2e-175;
cches 28;
 77.6%; Pred. No. 8.2e:
ive 35; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
            377; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Johnson KF, Bezila DJ,
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                                                                                                                                                                                                                                                                                                                                               486
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Best Local Similarity
Matches 377; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              fucosyl; fucose.
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                                  This sequence represents an alpha-1,3/4-fucosyltransferase protein which was used in the method of the invention for producing a fucosylated glycoprotein. The method involves contacting a recombinant fucosyltransferase protein with a mixture comprising a donor substrate which comprises a fucosyl residue, and an acceptor substrate on a glycoprotein, under conditions such that the fucosyltransferase protein catalyzes the transfer of the fucose residue from a donor substrate to the acceptor substrate to the glycoprotein. The method is useful for
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                                                                                                                                                                                                                                                                                                                                                                                                     1 MFQPLLDAFIESASIKKM-PLSYPPLKIAVANWWGG--ABEFKKSAMYFILSQRYTITLH
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                                                                                                                                                                                                                                                                                                                                                           46;
                                                                                                                                                                                                                                                                                                               Length 486;
                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                         28;
                                                                                                                                                                                                                                                                                                          84.6%; Score 1999; DB 8; 77.6%; Pred. No. 8.2e-175; tive 35; Mismatches 28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fucosyltransferase; protein production; enzyme
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                                                                                                                                                                                                                           producing fucosylated glycoprotein
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Claim 1; Fig 1; 84pp; English
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                                                                                                                                                                                                                                                                                                                               Local Similarity 77.6
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                                                                                                                                                                                                                                                                                                               The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polymucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RMPLYYDRLHHKAESVNDTTAPYXIKPDSLYTLKKPSHHPKEKHPHLCAVVNDESDPLKR 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GFASFVASNPNAPKRNAFYDALNSIEPVTGGGSVKNTLGYKVGNKNBFLSQYKFNLCFEN 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SQSYSYVTEKIIDAYFSHTIPIIWGSPSVAQDFNPKSFVNVCDFKDFBDEAIDHVRYLHTH 300
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MFQPLLDAYIESASIEKITSKSPPPLKIAVANWWGDEBVEFKKKNILYFILSQHYTITLH 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GFASFVASNPNAPKRNAFYDVLNSIEPVIGGGSVKNTLGYNIKNKSEFLSQYKFNLCFEN
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361 ISIDDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84.6%; Score 1999; DB 9; Length 486; 77.6%; Pred. No. 8.2e-175; Live 35; Mismatches 28; Indels 40
                                                                                                                                                 Bezila DJ;
                                                                                                                                                 Johnson KF,
                                                                                                                                                                                                                                                                                Example 1; SEQ ID NO 2; 97pp; English.
                                                                                               NEOSE TECHNOLOGIES INC
                                                                 22-JAN-2004; 2004US-00764212.
                                                                                                                                                 Simala-Grant J, Taylor D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 377; Conservative
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28-JUL-2005.
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The invention relates a purified transmembrane segment-free alpha 1,3-
fucusyltransferase polypeptide, having a repeat of the sequence: X1-X2-
leu-Argy-X = X4-Ty, where X1, X2 and X4 is Asp or Asn; and X-3 is
leu-Argy-X and or Ala. Also included are the nucleic acid encoding the protein

(including its complement or fragment), a vector containing the mucleic
acid, a host call containing nucleic acid or vector, an antibody which
comprising a host cell modified with the nucleic acid or its
comprising a host cell modified with the nucleic acid or its
comprising a host cell modified with the nucleic acid or its
comprising the protein with a substrate such as LackNc-R and GDP-fucose,
contacting the protein with a substrate, to produce oligopaccharides
contacting the protein with a substrate, to produce oligopaccharides
contacting the protein with a substrate, to produce oligopaccharides
contacting the protein with a substrate, to produce oligopaccharides
contacting the protein with a substrate, to produce oligopaccharides
and purifying the obtained oligosaccharides. The nucleic acid is useful
contacting the botained oligosaccharides. The nucleic acid is useful
as a probe for detecting the nucleic acid using polymerse chain reaction (PCR). The
polymucleotide, and detecting phyridisation of the probe; or by
contacting the nucleic acid using polymerse chain reaction (PCR). The
host cell is useful for producing a transmembrane segment-free alphal, 3-
cucleic acid using polymerse chain reaction (PCR). The
host cell is useful for producing a transmembrane segment-free alphal, 3-
corpopulate under conditions which allow expression and secretion of the
cuspiltransferase-fusion protein, by growing the host cell containing a
cucleic acid using the fusion protein. The antibody is useful
cor peptide under conditions which allow expression and secretion of the
corporation of isolating the fusion protein. The antibody is useful
and monitoring disease, and for inhibiting abnormal alphal,3-
cof malignant cells are useful in the pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mammalian tunnours. The present sequence represents an H. pylori alphal,3 fucosyltransferase encdoed by the fucT gene. (Updated on 29-AUG-2003 to
                                                                                                                                                                       Enzyme, fucT; alphal,3 fucosyltransferase, oligosaccharide; Lex; Ley;
sLex; Helicobacter pylori infection; malignant cell; mammalian tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
                                                                                                                         H. pylori alphal, 3 fucosyltransferase #2
                                                                                                                                                                                                                                            Helicobacter pylori; strain 1182.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 6; Fig 6; 37pp; English
                                                                                                                                                                                                                                                                                                                                                                        07-DEC-2000; 2000US-00733524.
                                                                                                                                                                                                                                                                                                                                                                                                                      98US-00092315.
                                                                                    (first entry)
                                                             (revised)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (UYAL-) UNIV ALBERTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 2002-582480/62.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ge Z;
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                                                                                                                                                                                                                                                                                   US2002068347-A1
                                                                                                                                                                                                                                                                                                                                                                                                                      05-JUN-1998;
                                                           29-AUG-2003
21-OCT-2002
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                    ABG30882;
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4

Gaps

47;

Query Match 84.0%; Score 1984.5; DB 5; Length 485; Best Local Similarity 77.6%; Pred. No. 1.8e-173; Matches 377; Conservative 34; Mismatches 28; Indels 47;

ABG30882 standard; protein; 485 AA.

RESULT 10 ABG30882

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                                                                                                                                                                        241 SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAQDFNFKSFVNVCDFKDFDEAIDHVRYLHTH
                                                                                                                                                                                                                RMPLYYDRLHHKAESVNDTTAPYKIKPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKR
                                                                                         RMPLYYDRLHHKAESVNDTTSPYKLKPDSLYALKKPSHHFKENHPNLCAVVNNESDPLKR
                                                                                                                                SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDPNPKSPVNVHDFKNPDEAIDYVRYLHTH
                                                                                                                                                                                                     PNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPFVFYRDLNEPL
                                                                                                                                                                                                                                                        GPASFVASNPNAPKRNAFYDALNSIEPVTGGGSVKNTLGYKVGNKNEFLSQYKFNLCFEN
          1 MFQPLLDAYIBSASIBKITSKSPPPLKIAVANWWGDEBVEBFKKNILYFILSQHYTITLH
MFQPLLDAFIESASIKKM-PLSYPPLKIAVANWWGG--AEEFKKSAMYFILSQRYTITLH
                                                                                                                                                                                                                                                                                                                              435 VKKLGL 440
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H. pylori alphal, 3 fucosyltransferase #4. ABG30884 standard; protein; 476 AA. (first entry) (revised) 29-AUG-2003 21-OCT-2002 ABG30884; BLex; RESULT 11 ABG3088

2; fucT; alphal,3 fucosyltransferase; oligosaccharide; Lex; Ley; Helicobacter pylori infection; malignant cell; mammalian tumour.

Helicobacter pylori; strain 26695A

US2002068347-A1

06-JUN-2002

07-DEC-2000; 2000US-00733524. 98US-00092315 15-JUN-1998;

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(UYAL-) UNIV ALBERTA

VPI; 2002-582480/62 Ge Z; Taylor DE,

Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.

3xample 3; Fig 6; 37pp; English.

C The invention relates a puritied transmembrane segment-tree alpha 1.3-c fucosyltransferase polypeptide, having a repeat of the sequence: X 1-X 2 c fucosyltransferase polypeptide, having a repeat of the sequence: X 1-X 2 c leu-Arg-X 3-X 4-Tyr, where X 1, X 2 and X 4 is Asp or Asn; and X 3 is 1.4 x 1.5 including its complement or fragment), a vector containing the nucleic coid, a host cell containing nucleic acid or vector, an antibody which selectively binds to the protein and agene expression system for producing transmembrane segment-free alphal, 3- fucosyltransferase, comprising a host cell modified with the nucleic acid or its contacting the protein with a substrate such as lack, by contacting the protein with a substrate such as lack, by contacting the protein with a substrate, to produce oligosaccharides, or by culturing the cell, contacting the protein with a substrate, to produce oligosaccharides, or by culturing the cell, contacting the protein with a substrate, to produce oligosaccharides, or by contacting the bost cell with a substrate, to produce oligosaccharides, and purifying the obtained oligosaccharides. The nucleic acid is useful as a probe for detecting the nucleic acid using polymerse chain reaction (PCR). The polymelectide, and detecting phynidisation of the probe; or by colymelectide, and detecting phynidisation of the probe; or by colymelectide, and detecting phynidisation of the probe; or by colymelectide, and detecting phynidisation of the probe; or by cortor operably linked to a polymerse chain reaction (PCR). The cost cell is useful for producing a transmembrane segment. Free alphal, 3- fucosyltransferase-fusion protein, by growing the host cell containing a condition protein and isolating the fusion protein. The antibody is also useful for detecting the protein in a sample. The nucleic acid is useful for conditions which allow expression and for alphal, 3- fucosyltransferase gene product activity. The nucleic acid is an any poduce of maingnant cells. The antibody is also useful for d invention relates a purified transmembrane segment-free alpha 1,3standardise OS field)

Sequence 476 AA;

8 셤 ò 셤 ਨੇ 셤

176 236 296 -----DDLRADYNNLRADYNNLRADY 381 9 241 NSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIKYLHT 301 HPNAYLDMLYENPLATLDGKAYFYQDLSFKKILDFFKTILENDTIXHNNPFIFYRDLHBP 1 MFQPLLDAFIESASIEKAVSKSPPPPLKIAVANWWGDEBIKEFKKSVLYFILSQRYAITL NSQGYGYVTEKI I DAYPSHTI PI YWGSPSVAKDFNPKSFVNVHDFKNFDEAI DYVRYLHT HPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPFVFYRDLNEP |:|| 361 LISIDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNY RGFAS FVASNPNAPKRNAFYDALNS I EPVTGGGS VKNTLGYKVGNKNEFLSQYKFNLCFE 117 LRMPLYYDRLHHKAESVNDTTAPYKIKPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLK NNLRADYNNLRADYDRLLQNRSPLLELSQNTTFKIYHKAYHKSLPLLRAIRRWVKK 437 DDLRVNYDDLRVNYDRLLQNASPLLELSQNTTFKIYRKAYQKSLPLLRTIRRWVKK 476 1 MFQPLLDAFIESASIKKMPLSY--PPLKIAVANWWGGAE--EFKKSAMYFILSQRYTITL Gaps 39; 83.9%; Score 1982.5; DB 5; Length 476; 78.6%; Pred. No. 2.6e-173; Live 30; Mismatches 33; Indels 39; Best Local Similarity 78.68 Matches 374; Conservative 382 297 177 Query Match

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06-MAY-2004
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This is the amino acid sequence of the novel alpha-1,3-fucosyltransferase of Helicobacter pylori NCTC 11639, as deduced from the newly isolated furz gene (see AAV80321). The enzyme is characterised by 8 C-terminal heptad repeats and by the lack of a transmembrane domain. The absence of a transmembrane domain allows the enzyme to be readily
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            New isolated alpha-1-3-fucosyltransferase gene - obtained from Helicobacter pylori, used to develop products for the diagnosis treatment of intestinal mucosal diseases, e.g. tumours.
                                                                                                                   Alpha-1,3-fucosyltransferase; fucT gene; Lewis X; Lewis Y; sialyl Lewis X; tumour associated antigen; cancer; infection; mucosal disease; diagnosis; fucosylated oligosaccharide.
                                                                                                   Helicobacter pylori alpha-1,3-fucosyltransferase
                                                                                                                                                                                   96. .99
/note= "Asn is N-glycosylated"
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/note= "Asn is N-glycosylated"
341. .343
/note= "Asn is N-glycosylated"
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/note= "Asn is N-glycosylated"
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/note= "peptide repeat"
371.377
/note= "peptide repeat"
378.384
/note= "peptide repeat"
385.391
/note= "peptide repeat"
392.398
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/note= "peptide repeat"
413. .419
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                                                                                                                                                         Helicobacter pylori; strain NCTC 11639
                                                                                                                                                                           Location/Qualifiers
                                    AAW86008 standard; protein; 464 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 6; Fig 2; 51pp; English
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7. .405
/note= "per
406.
                                                                                 (first entry)
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                                                                        (revised)
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Modified-site
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                                                                      17-OCT-2003
29-MAR-1999
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                                                      AAW86008;
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                  RESULT 12
                         AAW86008
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production of fucosylated oligosaccharides such as Lewis X, Lewis Y and sialyl Lewis X, which are structurally similar to certain tumour associated antigens found in mammalla. These glycoconjugates also have research and diagnosis utility in the development of assays to detect antibodies. Inhibition of abnormal fucr gene product activity can be used for the treatment of intestinal mucosal disease. (Updated on 17-OCT-2003 to standardise OS field)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61 QNPNBFSDLVFGNPLGSARKILSYQNAKRVFYTGENBSPNFNLFDYAIGFDELDFNDRYL 120
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fucose; N-acetylglucosamine; glycoconjugate; enzyme.
                                                                                                                                                                                                                                                                                                         34; Indels 24; Gaps
released from recombinant host cells. The enzyme can be used in the
                                                                                                                                                                                                                                                                       Length 464;
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                                                                                                                                                                                                                                                                     83.7%; Score 1978; DB 2;
80.6%; Pred. No. 6.6e-173;
ive 32; Mismatches 34;
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Matches 374; Conservative
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SIDDLRADYNNLRADYNNLRADYNNLRADYNNLRADYDRLLQNRSPLLELSQNTTFKIYH
                                                                    Helicobacter pylori; strain 1111 FutA
          Alpha-1,3/4-fucosyltransferase
                                                                                                                                                                                                       (NEOS-) NEOSE TECHNOLOGIES INC
                                                                                                                                                                                                                                                                                                                                           Claim 1; Fig 2; 84pp; English
                                                                                                                                                                   23-JUL-2002; 2002US-0398156P.
08-NOV-2002; 2002US-0424894P.
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Matches 362; Conservative
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                                                                                                                                                                                                                                                     WPI; 2004-132958/13.
N-PSDB; ADJ27346.
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                                                                                            WO2004009793-A2
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                                                                                                                                                     This invention relates to novel isolated polynucleotides and the encoded polypeptides thereof, which are related to the fucosyltransferase enzymes (Futh and FutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycoproteins and glycolipids with the desired oligosaccharide moieties (i.e. by transfer of a fucose residue to Nacctylglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial fucosyltransferase is unaffected by the sialyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, bacterially expression systems. This polypeptide sequence is an H. pylori strain 1111 FutA protein sequence of the invention.
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                                                                                                                                                                                                                                                                                                                                                                                                                             9
                                                                               New isolated polynucleotide encoding fucosyltransferase protein, useful for synthesizing oligosaccharide moiety on a protein or lipid that is unglycosylated in its native form or for synthesizing glycolipids.
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                                                                                                                                                                                                                                                                                                                                                                                                                             1 MPOPLLDAFIESAPLKKWPLNLPPLKIAVANWWGDEEIKKFKKSVLYFILSOHYTITLHR
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                                                                                                                                                                                                                                                                                                                                                     83.4%; Score 1970.5; DB 8;
82.5%; Pred. No. 2.9e-172;
iive 39; Mismatches 29; ]
                                                                                                                                  Claim 16; SEQ ID NO 4; 72pp; English
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                        Johnson KF, Bezila DJ
                                             WPI; 2004-123401/12.
N-PSDB; ADJ77811.
                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                               Sequence 432 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This sequence represents an alpha-1,3/4-fucosyltransferase protein which was used in the method of the invention for producing a fucosylated glycoptorein. The method involves contacting a recombinant fucosyltransferase protein with a mixture comprising a donor substrate which comprises a fucosyl residue, and an acceptor substrate on a glycoprotein, under conditions such that the fucosyltransferase protein catalyzes the transfer of the fucosy residue from a donor substrate the acceptor substrate on the producing fucosylated glycoprotein. The method is useful for producing fucosylated glycoprotein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAYLOMLYENPLATLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPFVFYRDLNEPLV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NPNEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYLR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate acceptor substrate on glycoprotein.
alpha-1; 3/4-fucosyltransferase; glycoprotein; fucosyltransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          9;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   83.4%; Score 1970.5; DB 8; Length
82.5%; Pred. No. 2.9e-172;
ive 39; Mismatches 29; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NPNEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYLR 118
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New isolated fucosyltransferase polynucleotides and polypeptides, useful
for synthesizing oligosaccharides, glycoproteins, or glycolipids.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9; Gaps
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Best Local Similarity 82.5%; Pred. No. 2.9e-172;
Matches 362; Conservative 39; Mismatches 29; Indels 9;
                                                                                                                                                                                                                                                                                                                                                                                                                   Bezila DJ;
                                                                                                                                                                                                         Fucosyltransferase; protein production; enzyme
                                                                                                                                                                                                                                                                                                                                                                                                                  Johnson KF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 1; SEQ ID NO 4; 97pp; English
                                                                                            AEB70133 standard; protein; 432 AA
               419 KAYHKSLPLLRAIRRWVKK 437
                                                                                                                                                                                                                                    Helicobacter pylori; strain 1111
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UNIV ALBERTA.
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                                                                                                                                                                                                                                                                                                                     22-JAN-2004; 2004US-00764212.
                                                                                                                                                                                                                                                                                                                                                                                                                   Simala-Grant J, Taylor D,
                                                                                                                                                  (first entry)
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OM protein - protein search, using sw model

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US-10-764-212-18 2362 1 MPQPLLDAPIESASIKKMPL......XHKSLPLLRAIRRWVKKLGL 440 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283416 segs, 96216763 residues Searched: Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

PIR_80:* Database

1: pir1:* 2: pir2:* 3: pir3:* 4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	alpha-(1,3)-fucosy	fucosyltransferase	alpha (1,3)-fucosy	fucosyltransferase	hypothetical prote	probable fucosyltr	alpha-(1,3)-fucosy	alpha-1,3-fucosylt	hypothetical prote	hypothetical prote	υ	lipoprotein [impor	hypothetical prote	alpha(1,3)-fucosyl	hypothetical prote	ORF MSV145 hypothe	hypothetical prote	conserved hypothet	3-alpha-galactosyl	hypothetical prote	virB4 protein prec	hypothetical prote	hypothetical prote	>	transcription anti	transcription anti	alpha(1,3/4)-fucos	hypothetical prote	~
ID	G71862	C64601	B71914	C64567	T44327	F96533	C97832	A57596	T23491	AH1879	JC4591	G90587	B71612	B36340	H96742	T28306	T45950	H82926	A36669	T18501	A97852	T15270	AF1917	T28301	AC1408	AC1784		F90283	T28317
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Lengt	43	476	454	42	346	513	183	433	451	32	400	789	3973	405	393	525	631	1272	36	3394	81	414	9	608	689	689	36	403	112
% Query Match Length	86.3	83.9	83.0	79.6	7.9	•	6.2	5.8	5.7	5.5	5.4	5.4	5.4	5.3	5.2	•	5.2	5.2	5.2	•		5.1	5.1			5.0	5.0		5.0
Score	2039	1982.5	1960.5	1879.5	187		147.5	137.5	134.5	•		127.5	126.5	124.5	124	124	124	123.5	123	121.5	120.5	120	119.5	119	118.5	118.5	117.5	117.5	117
Result No.	1	8	e	4	2	9	7	Φ	60	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29

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237 NSQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDYVRYLHT 240 NIQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVCDFKNFDEAIDYVRYLHT

177 RGFASFVASNPNAPKRNAFYDALNSIBPVTGGGSVKNTLGYKVGNKNBFLSQYKFNLCFE

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417 YHKAYHKSLPLLRAIRRWVKKLGL 440

30 116.5 4.9 1004 2 A71617 31 116 4.9 1104 2 B75221 32 115.5 4.9 2500 2 G71609 34 114.5 4.8 1084 2 C64695 35 114 4.8 2380 2 E71604 37 113.5 4.8 2380 2 E71604 37 113.5 4.8 359 2 A41156 39 113.5 4.8 359 2 A41156 41 112 4.7 836 2 T18460 42 112 4.7 836 2 T18416 44 110.5 4.7 1336 2 G71611 44 110.5 4.7 1336 2 G71611 45 110.5 4.7 1639 2 S05603
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0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0

ALIGNMENTS

	BESUIT.1	
	G71862	
	alpha-(1,3)-fucosyltransferase - Helicobacter pylori (strain J99) C:Species: Helicobacter pylori	er pylori (strain J99)
	A; Variety: strain J99	
	C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004	eb-1999 #text_change 09-Jul-2004
	C;Accession: G71862	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Righla, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, E.D.; Dolg, P.C.; Smitch, D.K.; Tree C. Gibeon D. Washear D. Mille C. D. Jiang O. Taylor D. F. Vovis G.F. ; J	, B.L.; Brown, E.D.; Dolg, P.C.; Smith, D.K.;
-	Nature 397, 176-180, 1999	מיניי סדמיים ביין מאדיניי מיניי מיניי מיניי
	A.Title: Genomic sequence comparison of two unrelated isolates of the human gastric patho	unrelated isolates of the human gastric patho
	A; Accession: G71862	20022C: J.M.
	A; Status: preliminary	
	A; Molecule type: DNA	
	A; Residues: 1-436 <arn></arn>	
	A,Cross.references: UNIPROT:QZKD7; UNIPARC:UP100000036D2; GB:AE001528; GB:AE001439;	:UPI00000036D2; GB:AE001528; GB:AE001439; NID:
	A; Experimental source: strain Jyy	
	86.3%;	9; DB 2; Length 436;
	Hest Local Similarity 80.5%; Fred. NO. 8.18-135 Matches 384; Conservative 25; Mismatches 23	8.18-133; ches 23; Indels 12; Gaps 3;
	Qy 1 MPQPLLDAFIESASIKKMPLSYPPLKIAVANWWGGAEBFKKSAMYFILSQRYTITL	KIAVANWWGGAEEFKKSAMYFILSQRYTITL 56
	DD 1 MFQPLLDAFIESTPIKK-KITPKSPPPLKIAVANWWGGAEEFKKSTLYFILSQRYTITL	KIAVANWWGGAEEFKKSTLYFILSQRYTITL 59
	Qy 57 HONPNEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFLFDYAIGFDELDLRDRY	AVEYAGENEVPNFNLFDYAIGFDELDLRDRY 116
	DD 60 HQNPNEPSDLVLGSPIGSARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFRDRY	
	Qy 117 LEMPLYYDRLHHKAESVNDTTAPYKIKPDSLYT	LRMPLYYDRLHHKAESVNDTTAPYKIKPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLK 176
	DD 120 LRMPLYYASLHYKAESVNDTTAPYKLKDNSLYA	
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G.Species: Helicobacter pylori
C.Species: 109-Aug-1997 #sequence_revision 09-Aug-1997 #text_change 09-Jul-2004
C.Baccession: C64567
R.Tomb, J.F.; White, O.; Kerlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, R.D.;
Pererson, S.; Loffus, B.; Richardson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McKenney,
Son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey, L.
Nature 188, 539-547, 1997
A.Authors: Wallin, B.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser, C.N.
A; Title: The complete genome sequence of the gastric pathogen Helicobacter pylori.
A; Reference number: A64520; MuID:97394467; PMID:9252185
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                               A;Molecule type: DNA
A;Residues: 1-454 <ARN>
A;Cross-references: UNIPROT:Q9ZLI3; UNIPARC:UPI00000D3665; GB:AE001491; GB:AE001439; NLD:
A;Experimental source: strain J99
C;Genetics:
A;Gene: fucT
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A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             300 HPNAYLDMLYENPLNTLDGKAYFYQNLSFKKILDFFKTILENDTIYHDNPFIFYRDLNEP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 MEQPILIDAFIESASIKKMPLSY--PPLKIAVANWWGGAE--EFKKSAMYFILSGRYTITL
                                                                                                                                                                                                                                                                                                                                                                                                                                                1 MFQPLLDAYTDSTRLDETDYK-PPLNIALANWWPLDKRESKGFRRFILYFILSQRYTITL
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                                                                                                                                                                                                                                                                                                                                                                                                             1 MFQPLLDAFIESASIKKWPLSYPPLKIAVANWW----GGAEEFKKSAMYFILSQRYTITL
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                                                                                                                                                                                                                                                                    Query Match 83.0%; Score 1960.5; DB 2, Best Local Similarity 80.9%; Pred. No. 2.6e-129; Matches 368; Conservative 34; Mismatches 34;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SPLLELSQNTTFKIYHKAYHKSLPLLRAIRRWVKK
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   A;Status: preliminary
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R;Tomb, J.F.; White, O.; Kerlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, R.D. Peterson, S.; Loftus, B.; Richardson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McKenne son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey, L. Nature 388, 539-547, 1997
A;Authors: Wallin, E.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser, C. A;Title: The complete genome sequence of the gastric pathogen Helicobacter pylori.
A;Reference number: A64520; MUID:97394467; PMID:9252185
A;Accession: C64601
A;Relevin : preliminary; nucleic acid sequence not shown; translation not shown
A;Molecule type: DNA
A;Residues: 1-476 < TOM>A;Residues: 1-476 < TOM>A;Residues: UNIPROT:025366; UNIPARC:UPI00000D70CB; GB:AB000578; GB:AB000511; NID
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C;Species: Helicobacter pylori
A;Variety: strain J99
A;Variety: strain J99
C;Date: 12-Peb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004
C;Accession: B71914
R;Alm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, B.D.; Doig, P.C.; Smith, D.R.; Ives, C.; Gibbon, R.; Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; Vovis, G.F.; Nature 397, 176-180, 1999
A;Title: Genomic sequence comparison of two unrelated isolates of the human gastric path
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HONPNEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRY 116
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                                                                                                                                                                                                        fucosyltransferase - Helicobacter pylori (strain 26695)
C;Species: Helicobacter pylori
C;Date: 09-Aug-1997 #sequence_revision 09-Aug-1997 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 MFQPLLDAFIESASIKKMPLSY - - PPLKIAVANWWGGAE - - BFKKSAMYFILSQRYTITL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       83.9%; Score 1982.5; DB 2; Length 476; 78.6%; Pred. No. 8e-131; Live 30; Mismatches 33; Indels 39;
                                          436
413 YRKAYQKSLPLLRAIRRWVKKLGL
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Matches 374; Conservative
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Nature 408, 816-820, 2000
A, Authors: Hunter, J.L.; Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.C. C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali, Rizzo, M.; Rooney, T.; Rooney, T.; Rohey, D.; Sakano, H.
A, Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, I ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A, Fitle: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A, Recession: F96533
A, Status: preliminary
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                                                                                                                                                                                                                                                       A;Molecule type: DNA
A;Residues: 1-513 <STO>
A;Cross-references: UNIPROT:Q9FX97; UNIPARC:UPI00000BDB7; GB:AE005173; NID:g10120428;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          alpha-(1,3)-fucosyltransferase homolog RC1059 [imported] - Rickettsia conorii (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Species: Rickettsia conorii
C;Date: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 09-Jul-2004
C;Accession: C97832
R;Ogata, H.; Audic, S.; Renesto-Audiffren, P.; Fournier, P.E.; Barbe, V.; Samson, Science 293, 2093-2098, 2001
Science 293, 2093-2099, 2001
A;Title: Mechanisms of Evolution in Rickettsia conorii and Rickettsia prowazekii.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FVNVHDFKNFDEAIDYVRYLHTHPNAYLDML---YENPLNTLDGKAYFYQDLSFKKILD- 330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ------FFKTILE------3DTIYHNNPFVFYRDLNEPLVS 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       224 EFLSQYKFNLCFENSQGYGYVTEKIIDAYFSHTIP-IYWGSPSVAKDFNPKSFVNVHDFK 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      204 FSWAEYDIMSPVQPKTERAIAAAFISNCGARNFRLQALEALMKTNIKIDSYGGCHRNRDG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           264 -KV-DKVEALKRYKFSLAFENTNEEDYVTEKFFQSLVAGSVPVVVGPPNI-EEFAPASDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    369 AAVHSSCRLCIFLATRVREQEEESPNFKKRPCKCSRGGSDTVYH-----VFVRERGRFEME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 191 KRNAFYDALNSIEPVTG------GGSVKNTLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               217 YKVGNKNEFLSQYKPNLCFENSQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNP--KS
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                                                                                                                                                                                                                                                                                                                                                                                                                        Length
                                                                                                                                                                                                                                                                                                                                                                                                                     Score 160.5; DB 2;
Pred. No. 0.0013;
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Best Local Similarity 22.1%;
Matches 78; Conservative 53
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A;Gene: F14J22.8
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C;Date: 21-dan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004
C;Date: 21-dan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004
C;Accession: T44427
R;Yamasaki, S.; Shimizu, T.; Hoshino, K.; Ho, S.T.; Shimada, T.; Nair, G.B.; Takeda, Y.
Gene 237, 321-332, 1999
A;Title: The genes responsible for O-antigen synthesis of Vibrio cholerae 0139 are close A;Reference number: Z22749; MuID:99453293; PMID:10521656
A;Accession: T44127
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Residues: 1-346 <YAM>
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Probable fucosyltransferase [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 09-Jul-2004
C;Datesion: P65633
R;Theologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; ansen, N.F.; Hughes, B.; Huizar, L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: UNIPROT:O87156; UNIPARC:UPI00000AF5D0; EMBL:AB012957; NID:g4115688; A;Experimental source: strain O22
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            236
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                                                                                    LRMPLYYDRIHHKAESVNDTTAPYKIKPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLK 176
                                                                                                                                                                                                                                                                                NSQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDYVRYLHT 296
                                                                                                                                                                                                                                                                                                                                                                              HPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYH--NNPFVFYRDLN 354
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    283 NTFIDKRNPSNYE---DLYLYLKNMPDGEYLKYL-ENIENYLNSE----QSLQFKS-EGF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                415 KIYHKAYHKSLPLLRAIRRWVKKLGL 440
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VQTVVQ 339
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Best Local S:
Matches 47
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                                                                                                                                                                                                 alpha-1,3-fucosyltransferase Fuc-TIV (EC 2.4.1.-) - mouse
N;Alternate names: ELAM-1 ligand fucosyltransferase homolog
C;Species: Mus musculus (house mouse)
C;Date: 08-Feb-1996 #sequence_revision 08-Feb-1996 #text_change 09-Jul-2004
C;Accession: A57596
R;Gersten, K.M.; Natsuka, S.; Trinchera, M.; Petryniak, B.; Kelly, R.J.; Hiraiwa, N.; Je Joil, Chem. 270, 25047-25056, 1995
A;Title: Molecular cloning, expression, chromosomal assignment, and tissue-specific expr
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A;Cross-references: UNIPROT:Q21362; UNIPARC:UPI000015543A; EMBL:Z66497; PIDN:CAA91285.1;
A;Experimental source: clone K08F8
Q;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: UNIPROT:Q11127; UNIPARC:UP1000004039; GB:U33457; NID:g1039426; PIDN
C;Superfamily: galactoside 3(4)-L-fucosyltransferase
C;Keywords: glycosyltransferase; hexosyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              67 LTTRICWGQLPPLPWASPAPQRLVGVLLWW---EPFRGRGGY-------PKSP 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  64 SDLVFGSPIGAARKILSYONTKRVFYAGENEVPNFN-----LFDYAIGFDELDLRDRY 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---LHHKAESVNDTTAPY 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KIKPD-----SLYTLKKPSHHFKEKHPHLCAVVNDESDPLKRGFASFVASNPNAPK-RN 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        194 AFYDALNSIEPV----TGGGSVKNTLGYKVGNKNEFLSQYKFNLCFENSQGYGYVTEKI 248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     :|: : :|: | | | | : | : | : | : | : | 330 WRNAFLAGAVPUVLG-PDRANYERFVPRGAFIHVDDFPNAASLAAYLLFLDRNVAVY 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein KO8F8.3 - Caenorhabditis elegans
C,Species: Caenorhabditis elegans
C,Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -IDAYFSHTIPIYWGSPSVA--KDFNPK-SFVNVHDFKNFDEAIDYVRYLHTHPNAY 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 5.8%; Score 137.5; DB 2; Length 4 Best Local Similarity 22.4%; Pred. No. 0.04; Matches 80; Conservative 48; Mismatches 130; Indels
                                                                                                                                                                                                                                                                                                                                                                                       A; Reference number: A57596; MUID: 96027607; PMID: 7559635
                                                                                         283 NFDEAIDYV-----RYLHTHPNAYLDMLYEN 308
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A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
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submitted to the EMBL Data Library, October 1995
A,Reference number: 219747
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A, Status: preliminary
A, Molecule type: DNA
A, Residues: 1-433 <GER>
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R;Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriguchi, Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S. DNA, Res. 8, 205-213, 2001
A;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Anal A;Reference number: AB1807; WUID:21595285; PMID:11759840
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A;Experimental source: strain PCC 7120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein alr0585 [imported] - Nostoc sp. (strain PCC 7120)
C;Species: Nostoc sp. PCC 7120
A;Note: Nostoc sp. strain PCC 7120 is a synonym of Anabaena sp. strain PCC 7120
C;Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 09-Jul-2004
C;Accession: AH1879
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          226
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                                                                                                                                                                                                                                                                    113 RDRYLRMPLYYDRLHHKAESVNDTTA--PYKIKPDSLYTLKKPSHHFKEKHPHLCAVVND 170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              305 DIDYHPYVTFENSICEDYVTEKLWKSGYQNTIIPLVLKRKLVEPFVPFNSFIAIDDFKSV 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        227 -SQYKFNLCFENSQGYGYVTEKIIDAYFSHT-IPIYWGSPSVAKDFNPKSFVNVHDFKNF 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      201 SIE------PVTGGGSVKNTLGYKVGNKNEFLSQYKFNLCFEN-SQGYGYVTEKII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         141 KIKPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKRGFASFVASNPNAPKRNAFYDALN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            81 YONTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYLRMPLYYDRLHHKAESVNDTTAPY
                                                                                                                                                                                                                                                                                                                                  207 RPDYINMTLGFR-----HDTPAGSPYG-----YTVKLGAKSRKTGQVVDANLVNG
                                                                                                                                                                                                                                                                                                                                                                                                    171 ESDPLKRGFASFVASNPNAPKRNAFYDALN---SIEPVTGGGSVKNTLGYKVGNKNBFL-
                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Gene: CESP:KO8F8.3
A;Map position: 2
A;Introns: 30/2; 53/3; 133/1; 195/3; 242/3; 277/3; 307/2; 342/3; 382/2
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                                                                                                                                   DB 2; Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  285 DEAIDYVRYLHTHPNAYLDML---YENPLNTLDG 315
                                                                                                                                Query Match 5.7%; Score 134.5; DB Best Local Similarity 28.0%; Pred. No. 0.069; Matches 60; Conservative 32; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    E----NPLNTLDGKAYFYQDLS 324
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113 RDRY-LRMPLYYDRLHHKAESVNDTTAPYKIKPDSL----YTLKKPSHHFKEKHPHLCA 166
                                                                                                                                                                                                 167 VVNDESDPLKRGFASF-----VASNPNAPKRNAF----YDALNSIEPVTGGGSVKNTLGY 217
                                                                                                                                                                                                                                                                                                                                               303 ---NDSLFLSDYVF---ISNT----IEKQIFDINSDLDLVDYLNKPLRVEINYTISPLN 351
                                                                                                                                                                                                                                                                                                                                                                                                                          ------AYLDM 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                          352 QKAYEIQSFNRFKNSLLSTLDVDSLNLSDANDVIKNQRYKISYNSLRNSNNNINKIFWKI 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              412 IPESTSNNFNENFKKLIYGDLNLNYFYNDLSFEFRNNLSNLINYFALNFISKNKTYWHS- 470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical protein PFB0555c - malaria parasite (Plasmodium falciparum)
C;Species: Plasmodium falciparum
C;Date: 13-Nov-1998 #sequence_revision 13-Nov-1998 #text_change 09-Jul-2004
                                                                                                                         218 KVGNKNEFLSQYKFNLCFENSQGYGYVTEKIIDA----YFSHTIPI---YWGSPSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        305 LYENPLNTLD------GKAYFYQDLSFK------KILDFF--KTILENDŢIYHNN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      346 PFVFYRDLNEPLVSIDDLRADYNNLRADYNNL-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Experimental source: clone 3D7
                                                                                                                                                                                                                                                                                                                                                                                                                             267 AKDFNPKSF----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  428 LRAIRRWVK 436
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A,Gene: PFB
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C; Superfamily: galactoside 3(4)-L-fucosyltransferase
C; Superfamily: galactoside 3(4)-L-fucosyltransferase
K; Reywords: glycoprotein; glycosyltransferase; hexosyltransferase; transmembrane protein
F; 1-23/Domain: intracellular #status predicted <INT>
F; 24-49/Domain: transmembrane #status predicted <IRM>
F; 84,185/Binding site: carbohydrate (Asn) (covalent) #status predicted
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R;Chambaud, I.; Heillg, R.; Ferris, S.; Barbe, V.; Samson, D.; Galisson, F.; Moszer, I.;
Rucleic Acids Res. 29, 2145-2153, 2001
A;Title: The complete genome sequence of the murine respiratory pathogen Mycoplasma pulm A;Reference number: A99512; MUID:21267165; PMID:11353084
                                                                                   C;Accession: JC4591
R;Ozawa, M.; Muramateu, T.
R;Ozawa, M.; Muramateu, T.
A;Title: Molecular cloning and expression of a mouse alpha-1,3 fucosyltransferase gene A;Reference number: JC4591; MUID:97037075; PMID:8882722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: UNIPROT:Q98PW2; UNIPARC:UPI00000C80CB; GB:AL445566; PID:g14090022; A;Experimental source: strain UAB CTIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    64 SDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFN-----LFDYAIGFDELDLRDRY 116
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    191 RIDSDVFVPYGFLYSRSDPIEQPSGLGPPLAR------KQGLEAWVVSNWNEHQAQV 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  242 RYYHQLSRHVSVDVFGRTGPGRPVPAIGLL----HTVARYKFYLAFENSRHVDYITEKL 296
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                                  C;Species: Mus musculus (house mouse)
C;Date: 16-Apr-1996 #sequence_revision 24-May-1996 #text_change 24-Nov-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         lipoprotein [imported] - Mycoplasma pulmonis (strain UAB CTIP)
C;Species: Mycoplasma pulmonis
C;Date: 24-May_2001 #sequence_revision 24-May-2001 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -IDAYFSHTIPIYWGSPSVA--KDFNPK-SFVNVHDFKNFDEAIDYVRYLHTHPNAY 301
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     / Match 5.4%; Score 128.5; DB 2; Length 400; Local Similarity 21.8%; Pred. No. 0.15; nes 78; Conservative 49; Mismatches 131; Indels 99
                                                                                                                                                                                                                                                        A;Molecule type: mRNA
A;Residues: 1-400 <OZA>
A;Crose-references: UNIPARC:UPI000016CBAS; DDBJ:D63379
     alpha-1,3 fucosyltransferase (EC 2.4.1.-) - mouse
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A, Status: preliminary
A, Molecule type: DNA
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A;Genetic code: SGC3
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Rigardner, M.J.; Tettelin, H.; Carucci, D.J.; Cummings, L.M.; Aravind, L.; Koonin, B.V.; Pertea, M.J.; Salzberg, S.; Zhou, L.; Sutton, G.G.; Clayton, R.; White, O.; Smith, H.O.; Science 282, 1126-1132, 1998
A; Filtle: Chromosome 2 sequence of the human malaria parasite Plasmodium falciparum. A; Reference number: A71600; MUID:99021743; PMID:9804551
A; Reference number: A71602
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A;Residues: 1-3973 <GAR>
A;Cross-references: UNIPROT:096204; UNIPARC:UP10000179222; GB:AE001402; GB:AE001362; NID:
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A;Gene: PFB0555c
C;Superfamily: Plasmodium falciparum hypothetical protein PFB0555c
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58 QNPNEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNL----FDYAIGFDEL-DL 112

151; Indels 149;

DB 2; Length 789;

5.4%; Score 127.5; DE 20.9%; Pred. No. 0.45; tive 87; Mismatches 1

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Query Match

RESULT 12 G90587

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OY 23 PPLKIAVANWW 1	180 GL 166 AVWDESD 215GD 211 VRATLGYK :	Qy 268 KDFNPK-SFVNVH : : : Db 323 ERFVPRGAFIHVD RESULT 15 H96742 hypothatical protein F17M19 C;Species: Arabidopsis thal C;Date: 02-Mar-2001 #sequen C;Accession: H96742 R;Theologis, A.; Ecker, J.R Chin, C.W.; Chung, M.K.; C ansen, N.F.; Hughes, B.; Hu Nature 408, B16-820 A;Authors: Hunter, J.L.; Je C.A.; Li, J.H.; Lin, Y.; Lin,	A'Authors: Salzberg, S.L.; ker, M.; Wu, D.; Yu, G.; Fr A;Title: Sequence and analy A;Reference number: A86141; A;Accession: H96742 A;Status: preliminary A;Molecule type: DNA A;Residues: 1-393 <sto> A;Cross-references: UNIPROT C;Genetics: A;Gene: FITM19.14 A;Map position: 1 Query Match Best Local Similarity 3 Matches 29; Conservati</sto>	Oy 226 LSQVKFNLCFENS :	
PYDALNSIEPVTGGGSVRATLG-YKVGNRABFLSQYKFNL : : : : :	2242 YLHKKKKUHIKNEKYLLICKNKSI.HWHKYISYIDDUHLINNMLHLICKKKNIYYKYY 229 329 LDFFKTILENDTIYHNNPEVFYRDLNEPLVSIDDLRADYNNLRADYNNIRADYNNLRA 386 :	RESULT 14 B36340 alpha(1,3)-fucosyltransferase (EC 2.4.1) 4 precursor [validated] - human N;Alternate names: CD15; ELAM-1 ligand fucosyltransferase (ELFT); FCT3A; FUC-TIV; myeloi C;Species: Homo sapiens (man) C;Species: Homo sapiens (man) C;Species: Homo sapiens (man) C;Species: Homo sapiens (man) C;Species: Homo sapiens (man) C;Species: Homo sapiens (man) C;Species: John Said (man) C;Accession: B36340; A36340; A41202 R;Goelz, S.E.; Hession, C.; Goff, D.; Griffiths, B.; Tizard, R.; Newman, B.; Chi-Rosso, Cell 63, 1349-1356, 1990 A;Title: ELFT: a gene that directs the expression of an ELAM-1 ligand. A;Reference number: A36340; MUID:91084863; PMID:1702034 A;Molecule type: mRNA A;Residues: 1-405 <goel> A;Residues: 1-405 <goel> A;Accession: A36340; A;Accession: A36340; A;Accession: A36340; A;Accession: A36340; A;Accession: A36340;</goel></goel>	A, FOSIGUATE 1792: MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MARAMETARE MAR	A;Accession: A41202 A;Status: preliminary A;Raccession: A41202 A;Status: preliminary A;Raccession: A1200 A;Crose-references: UNIPARC:UP1000016B3ED; GB:S65161; NID:g239005; PIDN:AAB20349.1; PID C;Genetics: A;Gene: GDB:FUT4; CD15; FCT3A; FUC-TIV A;Crose-references: GDB:131563; OMIM:104230 A;Map position: 11q21-11q21 C;Superfamily: galactoside 31(4)-L-fucosyltransferase C;Keywords: glycoprotein; glycosyltransferase; hexosyltransferase C;Keywords: glycoprotein; glycosyltransferase; hexosyltransferase F;49-405/Product: alpha(1,3)-fucosyltransferase 4 #status predicted F;91,190/Binding site: carbohydrate (Asn) (covalent) #status predicted Query Match Query Match S;3*; Score 124.5; DB 2; Length 405; Best Local Similarity 22.7*; Pred. No. 0.3:	76; Conservative 4

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Jenkins, J.; Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.;
in, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali,
wley, D.; Sakano, H.
; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, I
Fraser, C.M.; Venter, J.C.; Davis, R.W.
lysis of chromosome 1 of the plant Arabidopsis.

1; MUID:21016719; PMID:11130712
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GO; GO: 0016020; C: nembrane; IEA.
GO; GO: 0016757; F: fucosyltransferase activity; IEA.
GO; GO: 0016757; F: transferase activity, transferring glycosyl. . .; IEA.
GO; GO: 0016486; P: protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco_trans_10.
InterPro; IPR001503; Glyco_trans_10; 1.
Complete proteome; Glycosyltransferase;
SEQUENCE 476 AA; 55927 MW; 32BFFDBBD36E1F74 CRC64;
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Tomb J.-F., White O., Kerlavage A.R., Clayton R.A., Sutton G.G.,
Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S.K.,
Dougherty B.A., Nelson K.E., Quackenbush J., Zhou L., Kirkness B.F.,
Peterson S.N., Loftus B.J., Richardson D.L., Dodson R.J., Khalak H.G.,
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Smith H.O., Fraser C.M., Venter J.C.;
                 180 RGFASFVASNPNAPIRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCPE
RGFASFVASNPNAPKRNAFYDALNS I EPVTGGGSVKNTLGYKVGNKNEFLSQYKFNLCFE
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "The complete genome sequence of the gastric pathogen Helicobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83.9%; Score 1982.5; DB 2; Length 476; 78.6%; Pred. No. 2.5e-126; tive 30; Mismatches 33; Indels 39;
                                                                                                                                                                                                                                                                                                                                                                      01-JAN-1998, integrated into UniProtKB/TrEMBL 01-JAN-1998, sequence version 1. 07-FEB-2006, entry version 25. Fucosyltransferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA]
STRAIN=26695 / ATCC 700392;
                                                                                                                                                                                                                                                                                                                                               476 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                    OrderedLocusNames=HP0651; ORFNames=HP 0651;
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GO; GO:0016020; C:membrane: IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.
GO; GO:0016757; F:transferase activity, transferaing glycosylation; IEA.
FARNIL929; Glyco-trans 10.
Glycosyltransferase; Transferase.
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1 MFQPLLDAPIESASIEKMVSKSPPPPLKIAVANWWGDEBIKEFKKSVLYFILSQRYAITL
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361 LISIDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNY
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
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                         MFQPLLDAYVESASIEKMASKSPPPLKIAVANWWGDEBIKEFKNSVLYFILSQRYTITLH
                                                                                                                             GFAS FVASNPNAPKRNAFYDALNS I EPVTGGGSVKNTLGYKVGNKNEFLSQYKFNLCFEN
                                                                                                                                                     GFASFVASNPNAPIRNAFYDALNSIEPVTGGGSVRNTLGYNVKNKNEFLSQYKFNLCFEN
                                                                                                                                                                                SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDYVRYLHTH
                                                                           RMPLYYDR1HHKAESVNDTTAPYKIKPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WUCLECTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
MEDLINE=99120557; PubMed=9923682; DOI=10.1038/16495;
Alm R.A., Ling L.-S.L., Moir D.T., King B.L., Brown E.D., Doig P.C.,
Smith D.R., Noonan B., Guild B.C., deJonge B.L., Carmel G.,
Tummino P.J., Caruso A., Uria-Nickelsen M., Mills D.M., Ives C.,
Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E., Vovis G.P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-MAY-1999, sequence version 1.
21-FEB-2006, entry version 23.
ALPHA (1,3)-FUCOSYLTRANSFERASE.
Name-fucr; ORFNAmes=jhp_0596.
Helicobacter pylori J99 (Campylobacter pylori J99).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales; Helicobacteraceae; Helicobacteria;
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Nature 397:176-180(1999).
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80.9%;
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Distributed under the Creative Commons Attribution-NoDerivs License
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"Molecular Cloning and Functional Expression of a Novel Helicobacter
pylori (alpha-1,4 Fucosyltransferase.";
Glycobiology 15:1076-1083(2005).
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:tunsferase activity, transferring glycosyl.
GO; GO:0016786; P:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco trans 10.
PANTHER; PTH11929; Glyco_trans 10.
Glycosyltransferase; Transferase.
SEQUENCE 432 AA; 50503 MW; 69D3A32FBD2F12C9 CRC64;
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a1 8%; Pred. No. 1.2e-122;
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PubMed=16000696; DOI=10.1093/glycob/cwj004;
  Mismatches
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34;
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Q6ST35;
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Matches 360; Conservative
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GO:0006486; P:protein amino acid glycosylation;
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                                                                                                                                                                                                                                                YGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDYVRYLHTHPNA 300
                                                                                                                                                                                                                                                                                                                           YLDMLYENPLATLDGKAYFYQNLSFKKILDFFKTILENDTIYHCDAHNYSALHRDLNEPL 359
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                                                                      61 NEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYLRMP 120
                                                                                                                               121 LYYDRLHHKAESVNDTTAPYKIKPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKRGFA 180
                                                                                                                                                                                                                                                                                                       YLDMLYBNPLNTLDGKAYFYQDLSPKKILDFFKTILENDTIYH---NNPFVFYRDLNEPL 357
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GO:0008417; F:fucosyltransferase activity; IEA.
GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA
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                               1 MFQPLLDAYIDSTRLDETDYK-PPLKIAVANWWGGVEEFKKSTLYFILSQRYTITLHRNP
                                                                                                                                                120 LYYAHIHYEAELVNDTTSPYKIKDNSLYALKKPSHHPKENHPNLCAVVNNESDPLKRGFA
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VSIDD-----LRINYDDLRINYDDLRINYERLLQNASPLLELSQNTSFKIY
               MFQPLLDAFIESASIKKMPLSYPPLKIAVANWWGGAEEFKKSAMYFILSQRYTITLHQNP
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STRAIN=26695 / ATCC 700392;
STRAIN=26695 / ATCC 700392;
TOMD J.-F., White O., Kerlavage A.R., Clayton R.A., Sutton G.G.,
Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S.R.,
Dougherty B.A., Nalson K.E., Quackenbush J., Zhou L., Kirkness E.F.,
Peterson S.N., Loftus B.J., Richardson D.L., Dodgen R.J., Khalak H.G.,
Glodek A., McKenney K., FitzGerald L.M., Lee N., Adams M.D.,
Hickey E.K., Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D.,
Watthey J.M., Cotton M.D., Weidman J.F., Fujii C., Bowman C.,
Watthey L., Wallin E., Hayes W.S., Borodovsky M., Karp P.D.,
Smith H.O., Fraser C.M., Venter J.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Helicobacter pylori (Campylobacter py\overline{1}ori).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JAN-1998, integrated into UniProtKB/TrEMBL 01-JAN-1998, sequence version 1. 07-FEB-2006, entry version 24. Pucosyltransferase.
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Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                       1 MFQPLLDAFIESASIEKWASKSPPPPLKIAVANWWGDEEIKEFKKSVLYFILSQRYAITL
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"Cloning and characterization of the alpha(1,3/4) fucosyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bacteria, Proteobacteria, Epsilonproteobacteria, Campylobacterales,
Helicobacteraceae, Helicobacter.
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MEDLINE=20138242; PubMed=10671538; DOI=10,1074/jbc.275.7.4988;
                                                                                                                      2; Length 425;
                                                                                                                                                                  Indels
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Submitted (FEB-2003) to the EMBL/GenBank/DDBJ databases.
InterPro; IPR001503; Glyco_trans_10.
PANTHER; PTHR1929; Glyco_trans_10; Transferase.
Complete protecome; Glycosyltransferase; Transferase.
SEQUENCE 425 AA; 49329 MW; 1182AF180D124A34 CRC64;
                                                                                                                 Query Match 79.6%; Score 1879.5; DB 2; Best Local Similarity 80.9%; Pred. No. 2.2e-119; Matches 361; Conservative 24; Mismatches 34;
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Biol. Chem. 275:4988-4994(2000).
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Name=fucTa;
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Query Match
Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                               HPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNP---FVFYRDL 353
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                                                                                                                                                                             1 MFQPLLDAFIDSTHLDE-TTHKPPLNVALANWWPLKNSEKKGFRDFILHFILKQRYKIIL
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
NCBI_TaxID=210;
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Bird M.I.;
"Lewis X biosynthesis in Helicobacter pylori. Wolecular cloning
EMBL; AF194963; AAF35291.2; -; Genomic_DNA.
GO; GO:0016020; C:membrane; IEA.
GO; GO:000841; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:tansferase activity, transferring glycosyl.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco, trans 10.
PANTHER; PTHA11929; Glyco_trans 10.
Glycosyltransferase; Transferase.
SEQUENCE 462 AA; 54560 MW; BD27F8B351ECE752 CRC64;
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MEDLINE=97407924; PubMed=9261148; DOI=10.1074/jbc.272.34.21349;
                                                                                                                   DB 2; Length 462;
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                                                                                                                74.9%; Score 1769.5; DB 2 72.3%; Pred. No. 7.4e-112; ive 43; Mismatches 55;
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01-JAN-1998, integrated into UniProtKB/TrEMBL.
01-JAN-1998, sequence version 1.
01-FEB-2006, entry version 23.
Alpha-(1,3)-fucosyltransferase (EC 2.4.1.-).
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J. Biol. Chem. 272:21349-21356(1997).
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Best Local Similarity 72.3°
Matches 336; Conservative
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Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                                                                                                                                                                                                    119 MPLYYDRLHHKAESVNDTTAPYKIKPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKRG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               61 FASFVASNANAPMRNAFYDALNSIEFPVTGGGAVKONTLGYKVGNKSEFLSQYKFNLCFENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QGYGYVTEK11DAYFSHT1P1YWGSPSVAKDFNPKSFVNVHDFKNFDEA1DYVRYLHTHP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAYLDMIYENPLATLDGKAYFYQNLSFKKILDFFKTILENDTIYHNNPFIFYRDLNBEVV
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                                                                                                                                                                                                                                                                                                                                                                                     14;
EMBL; AF006039; AAB93985.1; -; Genomic_DNA.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
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Bacteria; Bacteroidetes; Bacteroidetes (class); Bacteroidales;
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                                                                                                                                                                                                                                                                                                                          Length
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016740; F:transferase activity; IEA.
GO; GO:000686; P:protein amino acid glycosylation; IEA.
InterPro; IPR002105; Dockerin_1.
                                                                                                                                                    InterPro; IPR01553; Glyco trans 10.
PANTHER; PTHR11929; Glyco trans 10; 1.
Glycosyltransferase; Transferase.
SEQUENCE 333 AA; 39154 MW; CFFCB1AC127E0A8C CRC64;
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21-JUN-2005, sequence version 1.
07-FEB-2006, entry version 6.
Putative LPS biosynthesis related glycosyltransferase.
OrderedLocusNames=BP3460;
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Pred. No. 2.5e-94;
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9 84.1%; Pred. No. z...
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Q5L9S6;
                                                                                                                                                                                                                                                                                                                                                                                            Matches 280; Conservative
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us-10-764-212-18.rup

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18.3%; Score 431.5; DB 2; 34.8%; Pred. No. 4.8e-21;
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                                   Best Local Similarity 34.8%
Matches 113; Conservative
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02IE19;
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                                                                                                                                                                                                                                                      58 FGTSH--LEYDCIK-IMFIGENIVPDFNVCDYAIGFNYIDFGDRYLRLPLYAIYDGFSNL 114
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BioCyc; HHEP235279:HH1776-MONOMER; -
GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:tucansferase activity, transferring glycosyl. .; IEA.
GO; GO:0016757; F:transferase activity, transferase.
GO; GO:0016757; F:transferase.
Complete protecome; Glycosyltransferase; Transferase.
SEQUENCE 359 AA; 42275 MW; B01B3FBBBC82D463 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                  127 HHKAESVNDTTAPYKIKPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKRGFASFVASN
                                                                                                                                                               15 IKKMPLSYPPLKIAVANWWGGAEFFKKSAMYFI---LSQRYTITLHQNPNEPSDLVFGSP
                                                                                                                                                                                                                                                                                                                                                      187 PN--APKRNAFYDALNSIBPVTGGGSVKNTLGYKVGNKNEFLSQYKFNLCFENSQGYGYV
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MEDLINE=22709201; PubMed=12810954; DOI=10.1073/pnas.1332093100;
Suerbaum S., Josenhars C., Sterzenbach T., Drescher B., Brandt P.,
Bell M., Droege M., Fartmann B., Pischer H.-P., Ge Z., Hoerster A.,
Holland R., Klein K., Koenig J., Macko L., Mendz G.L., Nyakatura G.,
Schauer D.B., Shen Z., Weber J., Frosch M., Fox J.G.;
"The complete genome sequence of the carcinogenic bacterium
Helicobacter hepaticus.",
Proc. Natl. Acad. Sci. U.S.A. 100:7901-7906(2003).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
                                                                                                                              74;
                                                                                              Query Match 18.8%; Score 445; DB 2; Length 331; Best Local Similarity 35.4%; Pred. No. 5.2e-22; Matches 118; Conservative 46; Mismatches 95; Indels
                                                                  331 AA; 39181 MW; 679FA409DF8CB864 CRC64;
InterPro; IPR001503; Glyco trans 10.
PANTHER; PTHR11929; Glyco trans 10; 1.
PROSITE; PS00448; CLOS_CELIULOSOME_RPT; UNKNOWN_1.
Complete proteome; Transferase.
SEQUENCE 331 AA; 39181 MW; 679FA409DF8CB864 CR
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Q7vfal;
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                                                                                                              41 KSAMYFILSQRYTITLHQNPNEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNL 100
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Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                     101 FDYAIGFDELDLRDRYLRMPLYYDRLHHKAESVNDTTAPYKIKPDSLYTLKKPSHHFKEK
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                                                                                                                                                                                                                                                                           23 KGKIVALLEQHYELIL---TNKDPDYIFYSCMGFEH--LNY-NKVRIFATGENLRADFNF
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US DOE Joint Genome Institute;
US DOE Joint Genome Institute;
Copeland A., Lucas S., Lapidus A., Barry K., Detter J.C., Glavina T.
Copeland N., Israni S., Pitluck S., Brettin T., Bruce D., Han C.,
Tapia R., Gilna P., Kiss H., Schmutz J., Larimer F., Land M.,
Kyrpides N., Anderson I., Sanford R.A., Ritalahti K.M., Thomas H.S.,
Rirby J.R., Zhulin I.B., Loeffler F.E., Richardson P.;
"Complete sequence of Anaeromyxobacter dehalogenans 2CP-C.";
Submitted (JAN-2006) to the EMBL/GenBank/DDBJ databases.
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                                                           65;
Length 359;
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07-MAR-2006, entry version 1.
Putative LisS biosynthesis related glycosyltransferase
ORFNames=Adeh_3056,
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Sucgang R., Berrimann M., Song J., Olsen R., Szafranski K., Xu Q.,
Tunggal B., Kummerfeld S., Madera M., Konfortov B.A., Rivero F.,
Bankler A.T., Lehmann R., Hamiln N., Davies R., Gaudet P., Fey P.,
Pilcher K., Chen G., Saunders D., Sodergren E.J., Davis P.,
Rerhornou A., Niez., Hall N., Anjard C., Hemphill L., Bason N.,
Parbrother P., Desany B., Just E., Morio T., Rost R., Churcher C.M.,
Cooper J., Haydock S., van Driessche N., Cronin A., Goodhead I.,
Muzny D.M., Mourier T., Pain A., Lu M., Harper D., Lindsay R.,
Hauser H., James K.D., Quiles M., Madan Babu M., Saito T.,
Buchrieser C., Wardroper A., Felder M., Thangavelu M., Johnson D.,
Knights A., Loulseged H., Hurnandez J., Rabbinowitsch B., Steffen D.,
Sanders M., Mu J., Kohara Y., Shary S., Simmonds M.N., Spiegler S.,
Tivey A., Suyano S., White B., Walker D., Woodward J.R., Winckler T.,
Cox B.C., Chisholm R.L., Globs R.A., Loomis W.F., Platzer M.,
Kaya R.R., Williams J.G., Dear P.H., Noegel A.A., Barrell B.G.,
                    94 --NLY-LGDP-RFLLERRRDVNAIVAE----KTRFCNLVCSNRAARERLRFFEKLSRYK 144
                                                                      263
                                                                                                     204
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144 PDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKRGFASFVASNPNAPKRNAFYDALNSIE 203
                                                                                                                                          264 PSVAKDFNPKSFVNVHDFKNFDEAIDYVRYLHTHPNAYLDMLYENPLNTLDGKAYFYQDL 323
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                                                                                          PVTGGGSVKNTLGYKVGNKNEFLSQYKFNLCFENSQGYGYVTEKI IDAYFSHTIPIYWGS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco trans 10.
PANTHER; PTHR11929; Glyco trans 10.
Glycosyltransferase; GolgI stack; Hypothetical protein; Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 435:43-57(2005).
-!- CAUTION: The sequence shown here is derived from an
EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry which is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "The genome of the social amoeba Dictyostelium discoideum.";
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Dictyostelium discoideum (Slime mold).
Bukaryota, Mycetozoa, Dictyosteliida, Dictyostelium.
NCBI_TaxID=44689;
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                                                                                                                                                                                                                                                                                                                                                                         24-MAY-2005, integrated into UniProtKB/TrEMBL. 24-MAY-2005, sequence version 1. 07-MAR-2006, entry version 5. Hypothetical protein. ORFNames=DDB0186041;
                                                                                                                                                                                                                                                                                                                                           462 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PubMed=15875012; DOI=10.1038/nature03481;
                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                               324 SPKKILDPPKTI 335
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263 GV--LLDWLERV 272
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Q54PJ9;
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Length 462;

Score 210; DB 2;

8.98;

Query Match

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Sucgang R., Berriman M., Song J., Olsen R., Szafranski K., Xu Q.,
Funggal B., Kummerfeld S., Madera M., Konfortov B.A., Rivero F.,
Punggal B., Kummerfeld S., Madera M., Ronfortov B.A., Rivero F.,
Pungara B., Kummerfeld S., Madera M., Ronfortov B.A., Gaudet P., Fey P.,
Rankler A.T., Lehmann B., Bavies R., Gaudet P., Fey P.,
Pilcher K., Chen G., Saunders D., Sodergren E., Davis P.,
Rerhornou A., Niez., Hall N., Anjard C., Hemphill L., Bason N.,
Rerhornou A., Niez., Wan Driessche N., Cronin A., Goodhead I.,
Muzny D., Mourier T., Paln A., Luhasy R.,
Hauser H., James K., Quiles M., Mohan M.B., Saito T., Buchrieser C.,
Wardroper A., Felder M., Thangavelu M., Johnson D., Knights A.,
Loushihara H., Hernandez J., Rabbinowitsch B., Steffen D., Sanders M.,
Sugano S., White B., Walker D., Woodward J., Winckler T., Tanaka Y.,
Sugano S., White B., Walker D., Woodward J., Winckler T., Tanaka Y.,
Shaulsky G., Schleicher M., Weinstcock G., Rosenthal A., Cox B.C.,
Millams M.L., Gibbs R., Loomis W.F., Platzer M., Kay R.R.,
Milliams J., Dear P.H., Noegel A.A., Barrell B., Kuspa A.;
Nature O.O. (2005).
                                                                                                                                                                                 98 -----FNLFDYAIGFD-ELDLRDRYLRMPLYYDRLHHK--AESVNDTTAPYKIKPDSLY 148
                                                                                                                                                                                                                                                                                      149 TLKKPSHHPKEKHPHLCAVVNDESDPLKRGFASFVASNPNAPKRNAFYDALNSIEPVTGG 208
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              259 IYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDYVRYLHTHPNAYLDMLYENPLNTLDGKAY 318
                                                                                                                          131 YYIVRKPY-----YPNOKLDMEIWSDYIVDFEAPKKKLSSRNVPRTLISMEPQ-PNRTC 183
                                                                                                                                                                                                                                                                                                                 240 QVMK---HNNTLQPH-----QKSIPLANWPCTNCNSHSN---RNEYVQELMKFIVVDSF 287
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Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                               184 EFDKDCFEFFNFKVSFESQSDIRMGFDTPSSSAYKLYNKLTIDEIAKIQTQFKLE---Y
                                                                             YFILSQRYTITLHQNPNEPSDLVPGS----PIGAARKILSYQNTKRVFYAGENEVPN---
                               Gaps
                             68;
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  ; Pred. No. 7.6e-06;
64; Mismatches 127; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             348 IFWGHPSTIKYLPLNSYIFVGDFKNAEHLANHLKFLSENDNEYF----
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Eukaryota; Mycetozoa; Dictyosteliida; Dictyostelium.
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GO; GO:0008417; F:fucosyltransferase activity; IEA.
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23.8%;
                          81; Conservative
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     Best Local Similarity
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087156;
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                                                                                                                                                                                                                                                                                                                                                                                                           215 ------LGYKVGNKNEF------LSQYKFNLCFENSQGYGYVTE 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDBAIDYVRYLHTHPNAYLDMLY 306
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Rosembl; ENSCINGO0000066822; Ciona intestinalis.

GO; GO:0005795; C:Golgi stack: IEA.

GO; GO:0016020; C:integral to membrane; IEA.

GO; GO:0016020; C:membrane; IEA.

GO; GO:00160417; F:tucosyltransferase activity; IEA.

GO; GO:0016757; F:transferase activity, transferring glycosyl...;

GO; GO:0016757; F:transferase activity, transferring glycosyl...;

GO; GO:0016757; F:transferase activity, transferring glycosyl...;

GO; GO:0016757; F:transferase activity, transferring glycosyl...;

RO; GO:0006486; P:protein amino acid glycosylation; IEA.

RINTERPRO; IPR001005; Myb_DNA.bd.

RANTHER; PTHR1929; Glyco_trans_10; 1.

RANTHER; PS00037; MYB_1; UNKNOWN_1.

RROSITE; PS00037; MYB_1; UNKNOWN_1.

RROSITE; PS00037; MYB_1; UNKNOWN_1.

RROSITE; PS00037; MYB_1; UNKNOWN_1.

RROSITE; PS00037; MYB_1; UNKNOWN_1.
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Bukaryota; Metazoa; Chordata; Urochordata; Ascidiacea; Enterogona;
Phlebobranchia; Cionidae; Ciona.
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                                                                                                                                                                                                                                                  86;
                                                                                                                                                                                                                                                                                                    167 VVNDESDPL----KRGFASFVASNPNAPKRNAFYDALNSIEPVTGGGSVKNT
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                                                                                                                                                                                       Query Match 8.3%; Score 195; DB 2; Length 665; Best Local Similarity 25.5%; Pred. No. 0.00013; Matches 68; Conservative 31; Mismatches 82; Indels
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IPR013320; ConA_like_subgrp.
InterPro; IPR01503; Glyco_trans_10.
PANTHER; PTHR11929; Glyco_trans_10; 1.
Hypochetical protein.
SEQUENCE 665 AA; 76223 MW; D42588B008EBDB46 CRC64;
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QBGNA8;
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                                                             126 LINGGPDPKSKK----RNOKYVYFDLE---PTWALQGMNYSIGENGFFNWTMSYKRTSSI
                                                                                                                           ------PDELDLR----DRYLRMPLYYDRLHHKAESVNDTTAPYKIKPDSLY---T
                                                                                                                                                               150 LKKPSHHFKEKHPHLCAVVNDESDPLKRGFASFVASNPNAPKRNAFYDALNSIEPVTGGG
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                                                                                                                                                                                                                                                                                                               231 LRKQYAESLEKH------PPRGRCYGNFV--------PPRGTG
                                                                                                                                                                                                                                                                                                                                                                                210 SVKNTLGYKVGNKNEFLSQYKFNLCFENSQGY---GYVTEKI-IDAYFSHTIPIYWGSP-
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66 LVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNL--FDYAIG----
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GO; GO:0016020; C:membrane; IEA.

GO; GO:0008417; F:fucosyltransferase activity; IEA.

GO; GO:0006486; P:protein amino acid glycosylation; IEA.

InterPro; IPR001503; Glyco trans 10.

PANTHER; PTHR1929; Glyco trans 10; 1.

SEQUENCE 346 AA; 40359 MW; 28690BC3FEFFDA7F CRC64;
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4: /BMC_Celerra_SIDS3/ptodata/2/iaa/H_COMB.pep:*

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5: /BMC_Celerra_SIDS3/ptodata/2/iaa/H_COMB.pep:*

6: /BMC_Celerra_SIDS3/ptodata/2/iaa/RECOMB.pep:*

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372 2	502 2 1	139 2 1	~	5.8 433 2 US-09-092-315-1	5.8 433 2 US-09-733-524A-1	5.8 433 2 US-10-189-977A-1	5.8 433 3 US-10-392-098A-1	~	5.7 451 2 US-09-390-131-3	915 2	405 1 1	405 1			5.3 405 2 US-09-042-531-8	5.2 357 5 PCT-US91-00899-14
			6.4 486	5.8 433	5.8 433	5.8 433	5.8 433	5.7 450	5.7 451			-			-	5.2 357
1742.5	519	154.5	150	137.5	137.5	137.5	137.5	134.5	134.5	126.5	124.5	124.5	124.5	124.5	124.5	123.5
0.67	5 73.8 372 2 1	5 73.8 372 2 1 9 22.0 502 2 1	5 73.8 372 2 1 9 22.0 502 2 1 5 6.5 139 2 1	5 73.8 372 2 1 22.0 502 2 1 5 6.5 139 2 1 0 6.4 486 2 1	5 73.8 372 2 1 22.0 52.0 139 2 1 6.5 4 486 2 1 5 5 5 5 6 5 6 5 6 6 6 6 6 6 6 6 6 6 6	73.8 372 2 1 22.0 502 2 1 6.5 139 2 1 6.4 486 2 1 5.8 433 2 1 5.8 433 2 1	73.8 372 2 1 22.0 502 2 1 6.4 486 2 1 5.8 433 2 1 5.8 433 2 1 5.8 433 2 1 6.8 6.8 6.8 6.8 6.8 6.8 6.8 6.8 6.8 6.8	73.8 22.0 6.4 6.4 6.4 7.8 8.8 8.8 8.8 8.8 8.8 8.3 8.8 8.3 8.8 8.3 8.8 8.3 8.8 8.3 8.3	73.8 22.0 6.5 6.5 6.5 7.8 7.8 7.8 7.8 7.8 7.8 7.8 7.8 7.8 7.8	73.8 6.5.0 6.4.4 6.4.4 6.4.4 6.4.4 6.4.4 6.4.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.4.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.4.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.4.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.4.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.8.4 6.4	73.8 6.4 486 2 1 5.8 433 2 1 5.8 433 2 1 5.8 433 2 1 5.8 433 3 2 5.7 450 2 1 5.4 915 2 1	73.8 6.45 6.45 6.45 6.45 6.45 6.45 6.45 6.45	73.8 6.5.0 6.4.5 6.4.5 6.4.5 6.4.5 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0	73.8 6.45 9130 2 1 6.45 9130 2 1 5.8 4 433 2 1 5.8 4 433 2 1 5.7 4 4510 2 1 5.4 4 405 1 1 5.3 4 605 1 1 5.3 4 605 1 1	73.8 22.0 52.0 6.4 6.4 6.4 6.4 6.4 6.4 6.4 6.4	23.8 6.5.0 6.5.0 6.5.0 6.4.5 6.4.5 6.4.5 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.5.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6

ALIGNMENTS

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61 NEPSDLVFGSPIGAARKILSYONTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYLRMP 120
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                             Sequence 3, Application US/09092315
Patent NO. 639937
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TILLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT FILING DATE: 1990-06-05
RAPLICE APPLICATION NUMBER: US 60/048,857
EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE FREESE for Windows Version 3.0
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 2362; DB 2;
100.0%; Pred. No. 7.9e-224;
tive 0; Mismatches 0;
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US-09-092-315-3
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Matches 440; Conservative
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RESULT 1
US-09-092-315-3
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                                                                                                                                                                                       Sequence 3, Application US/09733524A

Patent No. 655429B

GENERAL INFORMATION:
APPLICANT: Taylor, Diane B.
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/733,524A
CURRENT FILING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR PILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
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                  361 DDLRADYNNLRADYNNLRADYNNLRADYNNLRADYDRLLQNRSPLLELSQNTTFKIYHKA 420
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DDLRADYNNLRADYNNLRADYNNLRADYNNLRADYDRLLQNRSPLLEI
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RESULT 3 US-10-189-977A-3

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APPLICANT: TAYLOT, Diane B.
APPLICANT: TAYLOT, Diane B.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: NUCLEET ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: FUCOSYLITANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/73,524
PRIOR APPLICATION NUMBER: US/09/733,524
PRIOR FILING DATE: 2000-12-07
PRIOR FILING DATE: 2000-12-07
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
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Patent No. 7029891
GENERAL INFORMATION
GENERAL INFORMATION
GENERAL INFORMATION
GENERAL INFORMATION
APPLICANT: Ge, Zhongming
APPLICANT: University of Alberta
TITLE OF INVENTION: Alpha-1,3 Fucosyltransferase
FILE REFERENCE: 017398-000420US
CURRENT APPLICATION NUMBER: US/10/392,098A
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Sequence 3, Application US/10189977A
Patent No. 6962806
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; OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpPucT)
US-10-392-098A-3
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US-09-092-315-8
; Sequence 8, Application US/09092315
; Sequence 8, Application US/09092315
; Patent No. 639937
; GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
; CURRENT FILING DATE: 1998-06-05
EARLIER APPLICATION NUMBER: US 60/048,857
EARLIER FILING DATE: 1997-06-06
; NUMBER OF SEQ ID NOS: 22
; SOFTWARE: FASTSEQ for Windows Version 3.0
; SEQ ID NO 8
                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 2362; DB 3;
100.0%; Pred. No. 7.9e-224;
tive 0; Mismatches 0;
             PRIOR APPLICATION NUMBER: US/10/120,319
PRIOR FILING DATE: 2002-04-09
PRIOR FILING DATE: 2002-04-09
PRIOR PILING DATE: 1997-06-06
PRIOR PILING DATE: 1997-06-06
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SEQ ID NO 3
LENGTH: 440
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2003-03-17
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ORGANISM: Helicobacter pylori
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 440; Conservative
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CURRENT FILING DATE:
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Best Local 8
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APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: G. Zhonghaling
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: FUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/733,524A
CURRENT FILING DATE: 2000-12-07
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1999-06-06
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                                                                  Length 454;
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                                                                                                     26; Indels
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83.0%; Pred. No. 1.1e-189;
iive 34; Mismatches 26;
                                                                   ;; Score 2015.5; DB 2
;; Pred. No. 1.1e-189;
34; Mismatches 26;
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SOFTWARE: FastSEQ for Windows Version 4.0
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                                                                   Query Match
Best Local Similarity 83.0%;
Matches 377; Conservative 3.
TYPE: PRT
ORGANISM: Helicobacter pylori
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Matches 377; Conservative
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                      , ORGANISM: He
US-09-092-315-8
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: University of Alberta
TITLE OF INVENTION: Alpha-1, 3 Fucosyltransferase
TITLE OF INVENTION: Alpha-1, 3 Fucosyltransferase
TITLE OF INVENTION: 017398-000420US
CURRENT FILING DATE: 2003-03-13
PRIOR PELICATION NUMBER: US/10/120,319
PRIOR PELICATION NUMBER: US 60/048,857
PRIOR PELICATION NUMBER: US 60/048,857
PRIOR PILING DATE: 1997-06-06
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SOFTWARE: PATENTIN Ver: 2.1
SEQ ID NO 8
SECTION OF SEQ ID NOS: 30
                                                                                                                                                                                                                                                                                                437
                                                                                                                                                                                                                                                                                                                    421 PLLELSONTSFKIYRKIYOKSLPLLRVIRRWVKK 454
                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 8, Application US/10392098A
Patent No. 7029891
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ORGANISM: Helicobacter pylori
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JEACHTAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, ZADOGMING
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: UNDERE: US/10/189,977A
TITLE OF INVENTION: UNDERE: US/09/73,524
CURRENT APPLICATION NUMBER: US/09/73,524
PRIOR APPLICATION NUMBER: US 60/092,315
PRIOR PILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 8
LENGTH: 454
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                                  QNPNEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYL 117
                                                      RMPLYYDRLHHKAESVNDTTAPYKIKPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKR 177
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MPQPLLDAPIESASIEKWASKSPPPLKIAVANWWGDERIKEFKKSTLYFILSQHYTITLH 60
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85.3%; Score 2015.5; DB 2
Best Local Similarity 83.0%; Pred. No. 1.1e-189;
Matches 377; Conservative 34; Mismatches 26;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 8, Application US/10189977A
Patent No. 6962806
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                      1 MFQPLLDAFIESASIKKM-PLSYPPLKIAVANWWGGAE--EFKKSAMYFILSQRYTITLH
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85.3%; Score 2015.5; DB 3; Length 454;
Best Local Similarity 83.0%; Pred. No. 1.1e-189;
Matches 377; Conservative 34; Mismatches 26; Indels 17;
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OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
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Query Match

84.6%; Score 1999; DB 2;
Best Local Similarity 77.6%; Pred. No. 5.2e-188;
Matches 377; Conservative 35; Mismatches 28;
                                                                                                        Sequence 2, Application US/09733524A Patent No. 6534298
                                                                                                                                                                                                                                                                                                                                                                                  ; ORGANISM: Helicobacter pylori
US-09-733-524A-2
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SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDYVRYLHTH
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                                                                                                                                                                                                                                                                                  GENERAL INTORNATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE;
FILE REFERENCE: 07254/04901
CURRENT PILING DATE: 1990-06-05
CURRENT PILING DATE: 1990-06-05
EARLIER PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: PASELSEQ for Windows Version 3.0
SSEQ ID NO 2
LENGTH: 486
                                                                                                          VSIDDLRADYNNLRADYNNLRADYNNLRADYNLRADYD-
                                                                                                                                                               404 PLLELSONTTFKIYHKAYHKSLPLLRAIRRWVKK 437
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ORGANISM: Helicobacter pylori
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Matches 377; Conservative
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GENERAL INFORMATION:
APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
TITLE GP. INVENTION: NUCLBIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/733,524A
CURRENT FILING DATE: 2000-12-07
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR PLLING DATE: 1998-06-05
PRIOR PLLING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 2 117 240 297 298 PNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPFVFYRDLNEPL 357 ----- DDLRADYNNLRADY 374 9 181 GFASFVASNPNAPKRNAFYDVLNSIEFVIGGGSVKNTLGYNIKNKSEFLSQYKFNLCFEN 241 SQGYGYVTEKIIDAYFSHTIPIYMGSPSVAQDFNPKSFVNVCDFKDFDEAIDHVRYLHTH 58 ONPNEPSDLVFGSPIGAARKILSYONTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYL 118 RMPLYYDRLHHKAESVNDTTAPYKIKPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKR GFASFVASNPNAPKRNAFYDALNSIEPVTGGGSVKNTLGYKVGNKNEFLSQYKFNLCFEN 238 SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDYVRYLHTH :|| :| | | :|| 361 ISIDDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNY NNLRADYNNLRADYNNLRADYDRLLQNRSPLLELSQNTTFKIYHKAYHKSLPLLRAIRRW 1 MFQPLLDAFIESASIKKM-PLSYPPLKIAVANWWGG--AEEFKKSAMYFILSQRYTITLH Gaps 46; Length 486; Indels

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                          GENERAL INCORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE GP. INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REPERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/733,524
PRIOR FILING DATE: 2000-12-07
PRIOR PELING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
NUMBER OF SEQ ID NOS: 27
SOFTWARE: PASTSEC for Windows Version 4.0
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Sequence 2, Application US/10189977A
Patent No. 6962806
                                                                                                                                                                                                                                                                                                                                                          ; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-10-189-977A-2
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Best Local Similarity 77.6*
Matches 377; Conservative
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IKKLGL 486
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LENGTH: 486
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; Sequence 2, Application US/10392098A; Patent No. 7029891 ; GENERAL INFORMATION:

US-10-392-098A-2

APPLICANT: Taylor, Diane E.

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 486;
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APPLICANT: Ge, Zhongming
APPLICANT: University of Alberta
ITLE OF INVENTION: Alpha-1.3 Fucosyltransferase
ITLE REPERENCE: 017399-000420US
CURRENT APPLICATION NUMBER: US/10/392,098A
CURRENT FILING DATE: 2003-03-17
PRIOR PLING DATE: 2002-04-09
PRIOR PLING DATE: 1997-06-06
PRIOR PLING DATE: 1997-06-06
PRIOR PLING DATE: 1997-06-05
PRIOR PLING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SOFTWARR: PARENTIN VET: 2.1
SOFTWARR: PARENTIN VET: 2.1
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84.6%; Score 1999; DB 3;
Best Local Similarity 77.6%; Pred. No. 5.2e-188;
Matches 377; Conservative 35; Mismatches 28;
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APPLICANT: Taylor, Diane
APPLICANT: Ge, Zhongming
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; ORGANISM: Helicobacter pylori
US-09-733-524A-1
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Sequence 1, Application US/09733524A

Patent No. 6534298

GENERAL INPORMATION:

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REFERENCE: 07254-049002

CURRENT APPLICATION NUMBER: US/09/733,524A

CURRENT FILING DATE: 1998-06-05

PRIOR FILING DATE: 1998-06-05

PRIOR FILING DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 27

SOOFWARE: PASLSEQ for Windows Version 4.0
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80.8%; Pred. No. 1.8e-186;
iive 32; Mismatches 33;
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
                                                      CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1998-06-05
EARLIER APPLICATION NUMBER: US 60/048,857
EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: PastSEQ for Windows Version 3.0
SEQ ID NO 1
                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT
ORGANISM: Helicobacter pylori
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Best Local Similarity 80.84
Matches 375; Conservative
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LENGTH: 464
TYPE: PRT
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GENERAL INC. 932800

FACERICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE GE, Zhonganing
TITLE OF INVENTION: WUCLERC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: PUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: 10254-049002
CURRENT APPLICATION NUMBER: US/10/189,977A
CURRENT PAPLICATION NUMBER: US/09/733,524
FRIOR FILING DATE: 1998-06-05
FRIOR FILING DATE: 1998-06-05
FRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FASESEQ for Windows Version 4.0
SEQ ID NO 1
LENGTH: 464
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1 MFQPLLDAPIESASIKKMPL......YHKSLPLLRAIRRWVKKLGL 440
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(c) 1993 - 2006 Biocceleration Ltd.
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Sequence 3, Application US/10120319
Publication No. US20020164749A1
GENERAL INFORMATION:
APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
TITLE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT FILING DATE: 2002-04-09
PRIOR PRILING DATE: EARLIER FILING DATE: 1998-06-05
PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-05
NUMBER OF SEQ ID NOS: 22
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
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4.1e-192;
US-10-335-977-8559

US-09-733-524-17

US-10-335-977-8558

US-10-320-319-6

US-10-392-096-6

US-10-392-096-6

US-10-764-212-12

US-09-733-524-16

US-10-764-212-16

US-10-764-212-16

US-10-764-212-13

US-10-764-212-13

US-10-764-212-13

US-10-764-212-13

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100.0%; Pred. No. 4.1
ative 0; Mismatches
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US-10-120-319-3
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Publication No. US20030166211A1

GENERAL INFORMATION:

APPLICANT: TAYLOR ALPHA-1, 3-FUCOSYLTRANFERASE

ITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE

FILE REPERENCE: 07254/049001

CURRENT FILING DATE: 1090-09-03

FRIOR PILING DATE: 1998-06-05

PRIOR PLICATION NUMBER: US/09/092,315

PRIOR PLING DATE: 1998-06-05

PRIOR PLING DATE: 1997-06-06

PRIOR PLING DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 22

SOFTWARE: FastSEQ for Windows Version 3.0
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4.1e-192;
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100.0%; Pred. No. 4.
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ORGANISM: Helicobacter pylori
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Best Local Similarity 100.
Matches 440; Conservative
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US-10-189-977-3
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Sequence 3, Application US/10392098

RESULT 3 US-10-392-098-3

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Sequence 18, Application US/10764212

Sequence 18, Application WS/10764212

GENERAL INFORMATION:

APPLICANT: Simala-Grant, Joanne

APPLICANT: Taylor, Diane

APPLICANT: Bezila, Daniel James

APPLICANT: Bezila, Daniel James

APPLICANT: Governors of the University of Alberta

TITLE OF INVENTION: H. Pylori Pucosyltransferases
                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 100.0%; Score 2362; DB 4; Best Local Similarity 100.0%; Pred. No. 4.1e-192; Matches 440; Conservative 0; Mismatches 0;
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Publication No. US20030166212A1
GENERAL INFORMATION:
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US-10-392-098-3
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ORGANISM: Helicobacter Pylori fucosyltransferase
                               NAME/KEY: PEPTIDE
LOCATION: (0)...(0)
OTHER INPORMATION: Strain 802 from UA802
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Publication No. US20020164749A1
GENERAL INFORMATION:
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Matches 438; Conservative
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Matches 377; Conservative
                                                                        ; OTHER INFORM US-09-733-524-3
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is Sequence 3, Application US/09733524

j Sequence 3, Application US/09733524

j Sequence 3, Application US/09733524

j Patent No. US20020068347A1

j Patent No. US20020068347A1

j APPLICANT: The Governers of the University of Alberta, a Canada Corporation

j APPLICANT: The Governers of the University of Alberta, a Canada Corporation

j TITLE OF INVENTION: EXPRESSION SYSTEMS FOR MAKING AND

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: EXPRESSING THEM

FILE REFERENCE: 07.254/049002

CURRENT APPLICATION NUMBER: US/09/733,524

CURRENT APPLICATION NUMBER: 09/092,315

PRIOR FILING DATE: 1998-06-05

PRIOR FILING DATE: 1999-06-06

NUMBER OF SEQ ID NOS: 20

SOFTWARE: FastSEQ for Windows Version 4.0

SECTION 03

LENGTH: 440

TYPE: PRI
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                                                                                                                                                                              ; OTHER INFORMATION: H. pylori strain 802 PutA fucosyltransferase
US-10-764-212-18
                                                                                                                                                                                                                                    Length 440;
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                                                                                                                                                                                                                                Query Match 100.0%; Score 2362; DB 5; Best Local Similarity 100.0%; Pred. No. 4.1e-192; Matches 440; Conservative 0; Mismatches 0;
            CURRENT APPLICATION NUMBER: US/10/764,212
CURRENT FILING DATE: 2004-01-22
NUMBER OF EEQ ID NOS: 81
SEQ ID NO 18
LENGTH: 440
TYPE: PRT
ORGANISM: Helicobacter pylori
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61 NEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYLRMP 120
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241 YGYVTEKIIDAYFSHTIPIYMGSPSVAKDFNPKSFVNNHDFKNFDEAIDYVRYLHTHPNA 300
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APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REPERENCE: 07254/04901
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT FILING DATE: 2002-04-09
PRIOR APPLICATION NUMBER: RAKLIER APPLICATION NUMBER: 09/092,315
PRIOR FILING DATE: BARLIER FILING DATE: 1998-06-05
PRIOR FILING DATE: RAKLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
NUMBER OF SEQ ID NOS: 22
SEQ ID NOS: 22
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SEQ ID NOS: 22
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     Length 440;
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99.4%; Score 2347; DB 3;
99.5%; Pred. No. 7.8e-191;
tive 0; Mismatches 2;
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83.0%; Pred. No. 1.3e-162;
iive 34; Mismatches 26;
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us-10-764-212-18.rapbm

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238 SQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDYVRYLHTH
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; ORGANISM: Helicobacter pylori
US-10-392-098-8
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Matches 377; Conservative
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                           58 ONPNEPSDLVFGSPIGAARKILSYONTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYL
                                                                                 RMPLYYDRLHHKAESVNDTTAPYKIKPDSLYTLKKPSHHPKEKHPHLCAVVNDESDPLKR
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Sequence 8, Application US/10189977

GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07284/04901.
CURRENT APPLICATION NUMBER: US/10/189,977

CURRENT PILING DATE: 2002-07-03

PRIOR APPLICATION NUMBER: US/09/092,315

PRIOR PILING DATE: 1998-06-05

PRIOR FILING DATE: 1998-06-05

NUMBER OF SEQ ID NOS: 22

NUMBER OF SEQ ID NOS: 22

SOFTWARE: FastSEQ for Windows Version 3.0
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83.0%; Pred. No. 1.3e-162;
tive 34; Mismatches 26;
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; ORGANISM: Helicobacter pylori
US-10-189-977-8
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Best Local Similarity 83.04
Matches 377; Conservative
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSION THEM (amended)
TITLE OF INVENTION: EXPRESSION THEM (amended)
TITLE OF INVENTION: EXPRESSION THEM (amended)
TITLE OF INVENTION: EXPRESSION THEM (amended)
TITLE OF INVENTION: EXPRESSION THEM (amended)
TITLE OF INVENTION: EXPRESSION THEM (amended)
TITLE OF INVENTION: EXPRESSION THEM (amended)
TITLE OF INVENTION TOWBER: US /09/733,524A
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR PAPLICATION NUMBER: US 09/092,315
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FASTERQ FOR Windows Version 4.0
SEQ ID NOS: 27
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358 VSIDDLRADYNNLRADYNNLRADYNNLRADYNNLRADYD-

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; Sequence 2, Application US/10120319
; Publication No. US20020164749A1
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                                                     US-09-733-524-18
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US-10-120-319-2
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US-10-764-212-6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     85.0%; Score 2007.5; DB 5; Length 485; 78.1%; Pred. No. 6.7e-162; tive 34; Mismatches 27; Indels 45;
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                                                                                                                                                                                                                                                                                       Sequence 6, Application US/10764212
Publication No. US20050164338A1
GENERAL INFORMATION:
APPLICANT: Simala-Grant, Joanne
APPLICANT: Taylor, Diane
APPLICANT: Taylor, Diane
APPLICANT: Bezila, Daniel James
APPLICANT: Neose Technologies, Inc.
APPLICANT: Neose Technologies, Inc.
APPLICANT: OF UNIVERTION: H. Pylori Pucosyltransferases
FILE REPERENCE: 019957-019400US
                                                                                       404 PLLELSONTTFKIYHKAYHKSLPLLRAIRRWVKK 437
                                                                                                                       421 PLLELSONTSFKIYRKIYOKSLPLLRVIRRWVKK 454
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CURRENT FILING DATE: 2004-01-22
NUMBER OF SEQ ID NOS: 81
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 6
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ORGANISM: Helicobacter pylori
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Matches 379; Conservative
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Sequence 18, Application US/09733524

patent No. US20020068347A1

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: The Governers of the University of Alberta, a Canada Corporation
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhonguning
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM
TITLE OF INVENTION: EXPRESSING THEM
TITLE OF INVENTION: EXPRESSING THEM
TITLE OF INVENTION: EXPRESSING THEM
CURRENT APPLICATION NUMBER: US/09/733,524
CURRENT APPLICATION NUMBER: 09/092,315
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-06
NUMBER OF SEQ ID NOS: 20
SOFTWARE: FastSEC for Windows Version 4.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
ORGANISM: helicobacter pylori fucosyltransferase
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us-10-764-212-18.rapbm

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       APPLICANT: Taylor. Diane E. APPLICANT: Taylor. Diane E. APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT FILING DATE: 2002-04-09
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/092,315
PRIOR APPLICATION NUMBER: EARLIER PILING DATE: 1998-06-05
PRIOR FILING DATE: BARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                        Query Match 84.6%; Score 1999; DB 4; Length 486; Best Local Similarity 77.6%; Pred. No. 3.6e-161; Matches 377; Conservative 35; Mismatches 28; Indels 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; Sequence 2, Application US/10189977; Sequence 2, Application US/10189977; Publication No. US20030166211A1
; GENERAL INFORMATION:
; APPLICANT: Taylor, Diane E.
; APPLICANT: Ge, Zhongming
; TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
; FILE REFERENCE: 07254/049001
; CURRENT APPLICATION NUMBER: US/10/189,977
CURRENT FILING DATE: 2002-07-03
; PRIOR FILING DATE: 1998-06-05
                                                                                                                                                                                                                                                                                     ; ORGANISM: Helicobacter pylori
US-10-120-319-2
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IKKLGL 486
GENERAL INFORMATION:
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US-10-189-977-2
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: NUCLBIC ACIDS ENCODING ALPHA-1.3
TITLE OF INVENTION: EXPRESSION EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT FILING DATE: 2003-03-17
PRIOR APPLICATION NUMBER: US/09/733,524A
PRIOR APPLICATION NUMBER: US/09/733,524A
PRIOR PLILING DATE: 1099-06-05
PRIOR PLILING DATE: 1998-06-05
PRIOR PLILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
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84.6%; Score 1999; DB 4;
Best Local Similarity 77.6%; Pred. No. 3.6e-161;
Matches 377; Conservative 35; Mismatches 28;
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 2
LENGTH: 486
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                                                                                                                                                         ; ORGANISM: Helicobacter pylori
US-10-189-977-2
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481 IKKLGL 486
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FILE OF INVENTION:
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GURRENT APPLICATION NUMBER: US/09/733,524
CURRENT APPLICATION NUMBER: 09/092,315
FRIOR FILING DATE: 1998-06-05
FRIOR FILING DATE: 1998-06-06
FRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 20
SOFTWARE: FREISEQ FOR Windows Version 4.0
SEQ ID NO 2:
LENGTH: 485
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                                                     1 MFQPLLDAYIESASIEKITSKSPPPLKIAVANWWGDEVEFKKONLYFILSQHYTITH
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                                  1 MFQPLLDAFIESASIKKM-PLSYPPLKIAVANWWGG--ABEPKKSAMYFILSQRYTITLH
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 28; Indels
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ORGANISM: Helicobacter pylori fucosyltransferase
Matches 377; Conservative 35; Mismatches
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; OTHER INFORMATION: Strain 1182 from UA1182
US-09-733-524-2
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481 IKKLGL 486
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US-09-733-524-2
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Search completed: August 11, 2006, 19:53:04 Job time : 108.213 secs

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44967, A
284, App
52598, A
8, Appli
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4748, Ap
20, Appl
23, Appl
23, Appl
66, Appl
10, Appl
24, Appl
1153, Appl
1153, Appl
1151, Appl
1163, Appl
1163, Appl
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                                                                         August 11, 2006, 19:47:49; Search time 16.7213 Seconds (without alignments) 1771.230 Million cell updates/sec
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1. /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US09_NEW_PUB.pep:*
2. /EMC_Celerra_BIDS3/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
3. /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
4. /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
5. /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
7. /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
8. /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US11_NEW_PUB.pep:*
8. /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US11_NEW_PUB.pep:*
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US-11-197-712-284

US-10-649-902-52598

US-10-537-642-18

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US-11-293-697-4748

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US-11-293-697-642-6

US-11-070-573-68

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US-10-527-411-26

US-10-527-411-153

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                                                  OM protein - protein search, using sw model
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26 109.5 4.6 873 6 US-10-5 27 109.5 4.6 1127 6 US-10-5 28 109.5 4.6 1127 6 US-10-5 29 109.5 4.6 1127 6 US-10-5 31 108 4.6 1130 6 US-10-5 31 107.5 4.6 1130 6 US-10-5 33 107.5 4.6 737 7 US-11-3 34 107.5 4.6 737 6 US-10-5 35 107.5 4.6 737 6 US-10-5 36 107 4.5 876 6 US-10-5 39 107 4.5 876 6 US-10-5 41 107 4.5 876 6 US-10-5 41 107 4.5 876 6 US-10-5 41 107 4.5 876 6 US-10-5 42 107 4.5 876 6 US-10-5 43 107 4.5 878 6 US-10-5 44 107 4.5 878 6 US-10-5 42 107 4.5 878 6 US-10-5 43 107 4.5 878 6 US-10-5 44 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 41 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 107 4.5 878 6 US-10-5 45 108 5 US-10-5 45 108 5 US-10-5 45 108 5 US-10-5 45 108 5 US-10-5 45 108 5 US-10-5 45 108 5 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 107 4.5 878 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 107 4.5 878 6 US-10-5 45 108 6 US-10-5 44 107 4.5 878 6 US-10-5 44 107 4.5 878 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 107 4.5 878 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 45 108 6 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-5 48 US-10-	873 6 US-10-527-411-169 Sequence 169, App 1127 6 US-10-527-411-159 Sequence 159, App 1129 6 US-10-527-411-40 Sequence 40, Appl 1129 6 US-10-527-411-40 Sequence 41, Appl 1129 6 US-10-527-411-74 Sequence 42, Appl 454 6 US-10-527-411-74 Sequence 174, Appl 1130 6 US-10-527-411-139 Sequence 139, Appl 1737 7 US-11-300-928-30 Sequence 139, Appl 1742 6 US-10-527-411-10 Sequence 13, Appl 175 6 US-10-527-411-10 Sequence 10, Appl 175 6 US-10-527-411-6 Sequence 62, Appl 175 6 US-10-527-411-6 Sequence 62, Appl 175 6 US-10-527-411-6 Sequence 63, Appl 175 6 US-10-527-411-6 Sequence 64, Appl 175 6 US-10-527-411-6 Sequence 67, Appl 175 6 US-10-527-411-6 Sequence 68, Appl 175 6 US-10-527-411-6 Sequence 68, Appl 175 6 US-10-527-411-6 Sequence 68, Appl 175 6 US-10-527-411-46 Sequence 44, Appl 175 6 US-10-527-411-46 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence 70, Appl 175 6 US-10-527-411-70 Sequence	ALIGNMENTS US/10953349 145A1 145A1 145A1 145A1 16B-DETERMINED DNA FRAGMENTS AND COJ 18C2 18C3 18C3 18C3 18C3 18C3 18C3 18C3 18C3	6.7%; Score 159; DB 6; Length 302; 25.1%; Pred. No. 1.5e-05; vative 45; Mismatches 94; Indels 70; Gai SNPNAPKRNAFYDALNSIEPVTGGGSVKNTLGYKVGNKNEFLS		FNLCFENSQGYGYVTEKTIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAI 288 :	DYVRYLHTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFK 333 ::
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374 YNNIERADYNNIERADY------NNIERADYDELLQNRSPL 405 ::|::|::||::|| 228 ESAVLAKFKSIKHEAVWKKERPGNI.KGDKELKIHRIYPL 266

8 8

RESULT 2 US-10-953-349-5128 Sequence 5128, Application US/10953349 ; Publication No. US20060107345A1

TIDES

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APPLICANT: BOUGUELER, Lydie
APPLICANT: BOUGUELER, Lydie
APPLICANT: Jobert, Severin
TITLE OF INVENTION: FULL-LENGTH HUMAN CDNAS ENCODING POTENTIALLY SECRETED PROTEINS
FILE REFERENCE: 78.U54.U2
CURRENT APPLICATION NUMBER: US/11/197,712
CURRENT PILING DATE: 2005-08-04
PRIOR APPLICATION NUMBER: US/09/876,997
PRIOR PLING DATE: 2001-06-08
PRIOR PLING DATE: 2001-06-08
PRIOR PLING DATE: 2000-12-07
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               9
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160 KRMKYLAANPAAYNQTLRWKYEGPSD------SPKALVDMAAVHSSCRLCIFLA 207
                                                    ----NDTIYHNNPFVFYRDLNEPLVSIDDLRADYNNLRAD 373
                                                                                    63
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APPLICANT: National Institute of Parobiological Sciences.
APPLICANT: Bio-oriented Technology Research Advancement Institution.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: The Institute of Physical and Chemical Research.
ILILE REPERENCE: MOA-A020191-US
FILIE REPERENCE: MOA-A020191-US
CURRENT APPLICATION NUMBER: UP 2002-203269
PRIOR PILING DATE: 2003-05-29
PRIOR PLILING DATE: 2002-05-30
PRIOR PLILING DATE: 2002-05-30
PRIOR APPLICATION NUMBER: UP 2002-1383870
PRIOR PLILING DATE: 2002-12-11
SOFTWARE: Patentin Ver. 2.1
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                                                                                                                                                        374 YNNLRADYNNLRADY-----NNLRADYDRLLQNRSPL 405
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Best Local Similarity 24.5%; Pred. No. 0.00015;
Matches 52; Conservative 31; Mismatches 92
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Publication No. US20060130160A1
GENERAL INFORMATION:
APPLICANT: Dunas Milne Edwards, Jean Baptiste
                                                                                                                                                                                                                                                                                                                                 ; Sequence 44967, Application US/10449902
; Publication No. US20060123505A1
; GENERAL INFORMATION:
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; ORGANISM: Oryza sativa
US-10-449-902-44967
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LENGTH: 246
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                            APPLICANT: ALEXANDROV, Nickolai et al.
TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
TITLE OF INVENTION: ENCONDED THERBY
FILE REFERENCE: 2750-1579PUS2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: Patentin version 3.3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -- PFK 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             193 TRVREQEESSPNFKKRPCKCSRGGSDTVYH----VFVRERGRFEMESVFLKGKSVTQEAL 248
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 231 FNLCFENSQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNP--KSFVNVHDFKNFDEAI 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       289 DYVRYLHTHPNAYLDML---YENPLNTILDGKAYFYQDLSFKKILD-------FFK 333
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               176 KRGFASFVASNPNAPKRNAFYDAL----NSIEPVTGGGSVKNTLGYKVGNKNEFLSQYK
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                                                                                                                                                                                                                                                                                                                                                                                        Query Match 6.7%; Score 159; DB 6; Length 323; Best Local Similarity 25.1%; Pred. No. 1.7e-05; Matches 70; Conservative 45; Mismatches 94; Indels '
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 5127, Application US/10953349
Publication No. US20060107345A1
GENERAL INFORMATION:
APPLICANT: ALEXANDROV, Nickolai et al.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; ORGANISM: Arabidopsis thaliana
US-10-953-349-5127
                                                                                                                                                                                                                                                                                                              ; ORGANISM: Arabidopsis thaliana US-10-953-349-5128
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             SENERAL INFORMATION:
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US-10-953-349-5127
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LENGTH: 323
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140 YKIKPDSLYTLKKPSHHPKEKHPHLCAVVNDESDPLKRGFASFVASNPNAPKRNAFYDAL 199
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQ ID NOS: 1161
SOFTWARE: PatentIn version 3.2
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Matches 79; Conserv
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       240 -----LVPLQSKNKLRKRLAPLVYVQSYCDPPSDRDSYVRELMTYIEVDSYGECLRNK 292
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                53 TITLHQNPNEPSDLVFGSPIGAARKIL-----SYQNTKRVFYAGENEVPNF 98
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APPLICANT: National Institute of Agrobiological Sciences.
APPLICANT: Bio-oriented Technology Research Advancement Institution.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: The Institute of Physical and Chemical Research.
TITLE OF INVENTION: FULL-LENGTH PLANT CDNA AND USES THEREOF
FILE REPERRENCE: MOA-A0205Y1-US
CURRENT APPLICATION NUMBER: US/10/449,902
CURRENT FILING DATE: 2003-05-29
PRIOR PILING DATE: 2003-05-29
PRIOR APPLICATION NUMBER: UP 2002-383870
PRIOR PLING DATE: 2002-12-11
NUMBER OF SEQ ID NOS: 56791
SOFTWARE: Patentin Ver. 2.1
LENGTH: 513
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                                                                                                                                                                                                                                                                                                                   Length 406;
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                                                                                                                                                                                                                                                                                                               6.0%; Score 141; DB 7; Length 40
22.7%; Pred. No. 0.00073;
tive 51; Mismatches 119; Indels
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PRIOR APPLICATION NUMBER: US 60/187,470
PRIOR FILING DATE: 2000-03-06
PRIOR PPLICATION NUMBER: US 60/169,629
PRIOR PILING DATE: 1999-12-08
NUMBER OF SEQ ID NOS: 482
SOFTWARE: Patent.pm
SEQ ID NO 284
LENGTH: 406
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Publication No. US20060123505A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 22.73
Matches 78; Conservative
                                                                                                                                                                     TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Oryza sativa
US-10-449-902-52598
                                                                                                                                                                                                                              ; NAME/KBY: SIGNAL
; LOCATION: -31...1
US-11-197-712-284
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188 YKIVMTTSLSSDVPVGYFSWAEYDIMAPV----PPKTEEALAAAFISNCGARNFRLQAL 242
                                                                                             256 TIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEA---IDYVRYLHTHPNAYLDML---YENP 309
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                                                               200 NSIE----PVTGGGSVKNTLGYKVGNKNEFLSQYKFNLCFENSQGYGYVTEKIIDAYFSH
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CURRENT APPLICATION DATE: 2005-06-06
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APPLICANT: The United States of America as Represented by the APPLICANT: Secretary of the Navy
APPLICANT: Sette, Alessandro
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PRIOR FILING DATE: 2002-12-06
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SEQ ID NO 4748
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                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: The United States of America as Represented by the APPLICANT: Secretary of the Navy APPLICANT: Secretary of the Navy APPLICANT: Secretary of the Navy APPLICANT: Secretary of the Navy APPLICANT: Secretary of the Navy APPLICANT: Secretary of the Navy APPLICANT: Sidney, John APPLICANT: Sidney, John APPLICANT: Such Mood, Scott TILLE OF INVENTION: PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE TILLE REFRENCE: EPT-103X X CURRENT APPLICATION NUMBER: US/10/537,642 CURRENT FILING DATE: 2005-06-06 PRIOR FILING DATE: 2005-16-06 PRIOR PLING DATE: 2005-12-06 NUMBER OF SEQ ID NOS: 1161

SOFTWARE PATENTING DATE: 2002-12-06

NUMBER OF SEQ ID NOS: 1161

SOFTWARE PATENTIN VERSION 3.2
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18.6%; Pred. No. 0.9;
tive 80; Mismatches 156; Indels 170;
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412 -PFHK 415
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RESULT

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145 DSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKRGFASFVASNPN-APKRNAFYDALNSIE 203
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APPLICANT: The United States of America as Represented by the APPLICANT: Secretary of the Navy
APPLICANT: Secretary of the Navy
APPLICANT: Sette, Alessandro
APPLICANT: Carucci, Daniel J.
APPLICANT: Sidney, John
APPLICANT: Sidney, John
APPLICANT: Sidney, John
APPLICANT: Southwood, Scott
TITLE OF INVENTION: PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE
FILE REFERENCE: EPI-103X
CURRENT APPLICATION NUMBER: US 60/431,494
PRIOR APPLICATION NUMBER: US 60/431,494
PRIOR FILING DATE: 2002-12-06
NUMBER OF SEQ ID NOS: 1161
SOFTWARE: Patentin version 3.2
SEQ ID NOS: 1161
SEQ ID NOS: 1161
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26.8%; Pred. No. 0.11;
ative 30; Mismatches 77;
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18.9%; Pred. No. 0.68;
tive 48; Mismatches 128;
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Sequence 4748, Application US/11293697
Publication No. US20060105376A1
GENERAL INPORMATION:
TITLE OF INVENTION: Novel full length cDNA
FILE REFERENCE: H1-A0106
CURRENT APPLICATION NUMBER: US/11/293,697
CURRENT PILING DATE: 2005-12-05
PRIOR APPLICATION NUMBER: US/10/108,260
PRIOR PILING DATE: 2002-03-28
NUMBER OF SEQ ID NOS: 5458
SOFTWARE: PATENTIN VET. 2.1
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Publication No. US20060165719A1
GENERAL INFORMATION:
APPLICANT: Epimmune, Inc.
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Best Local Similarity 26.8%
Matches 55; Conservative
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US-11-293-697-4748
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Matches 86; Conserv
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1613 MQLGVYRIRLNTLLASQLVSRANTGIDTIL/IMETQRLPEPPLGEGFFANFVLPKYDPAEH 1672
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APPLICANT: Meade, Thomas
APPLICANT: Meade, Thomas
APPLICANT: Mono, Halow
APPLICANT: Burton, Stephanie
APPLICANT: Sheets, Joel
APPLICANT: Merlo, Donald
APPLICANT: Merlo, Donald
APPLICANT: Merlo, Donald
APPLICANT: Merlo, Donald
APPLICANT: Merlo, Sonald
APPLICANT: Merlo, Sonald
APPLICANT: Merlo, Solation
TITLE OF INVENTION: Insecticidal Toxin Complex Fusion Proteins
TILE REFERENCE: DAS-118XC1
CURRENT APPLICATION NUMBER: US/11/070,573
PRIOR PILING DATE: 2005-03-02
PRIOR PLING DATE: 2004-03-02
PRIOR PLING SEQ ID NOS: 68
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Best Local Similarity 19.6%; Pred. No. 2.9;
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Publication No. US20060168683A1
GENERAL INFORMATION:
APPLICANT: Hey, Thinchy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM: Xenorhabdus nematophilus
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                                                                         157 FKE-----
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US-11-070-573-23
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                                                                                                                                                                                                                                                                                                                                                                                                                                                            563 ISNIHPAVLFLTLTVYPINNPIDDNNMSNVVENKILNPQKNLIINNNPFL---DINKNNI 619
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           620 NDEKLLYKANYLKQDINNIN-NYNQQKHPIISFIIEILELLFYNHFYTNNANLLNLKDYQ 678
    280 DEIYDNQKEYSHDDEMY-----NDEKNVDKANYPKTTSDSQNELTNYNSYHTDNSDNE 332
                                                                                                                                                GYVTEK-----IIDAYFSHT----IPIYWGSPSVAKDFNPKSFVNVHDFKNFDEA 287
                                                                                                                                                                                                                                                                                                                                                                                   503 QRKIKTNIFFKKKKKKLILQDYVILNEDNANRKIDVYIYRRILKSVDMFSSIFENYNNENIY 562
                                                                                                                                                                                                                                                                                                                                                                                                                                    ------DTIYHNNPFVFYRDLNEPLV 358
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 20, Application US/1137551

Sequence 20, Application No. US20060156434A1

GENERAL INFORMATION:

APPLICANT: Bintrim, Scott

APPLICANT: Larrimua, Ignacio

APPLICANT: Apel-Birkhold, Patricia

APPLICANT: Apel-Birkhold, Patricia

APPLICANT: Young, Scott

APPLICANT: Young, Scott

APPLICANT: Schafer, Barry

APPLICANT: Woung, Scott

APPLICANT: Woung, Scott

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APPLICANT: Woung, Scott

APPLICANT: Woung, Scott

APPLICANT: WOUNGER: US/11/375,551

CURRENT FILING DATE: 2006-03-14

PRIOR APPLICATION NUMBER: US/10/753,901

PRIOR PILING DATE: 2004-01-07

PRIOR PLILNG DATE: 2004-01-07

PRIOR PLILNG DATE: 2004-01-21
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                                                                                                                                                                                                                                          288 IDYVRYLHTHPNAYLDMLYENPLNTLDG------KAYFYQDLSF----
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4.7%; Score 111.5; DB 7; Length 2538;
Best Local Similarity 19.6%; Pred. No. 2.9;
Matches 113; Conservative 60; Mismatches 158: Indels 245.
                                                   204 PVTGGGSVKNTLGYKVGNK-----NEFLSQYK---FNLC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           410 -----QNTTFKIYHKAYHKSLPLLRAIRRWVKKL 438
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ORGANISM: Xenorhabdus nematophilus
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SOFTWARE: Patentin version 3.3
SEQ ID NO LENGTH: 2538
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1778 -----GPLNVSIATGY-----SAPMDFNSASALYYWELFYYTPMMCFQRL 1817
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--KHPHLCAVVNDESD-----PLKRGFASFVASNPNAPKRNA 194
                                                                                                                                                                             234 CFENSQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKS--------FVNV 278
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us-10-764-212-18.rapbn

Db 1571 PETKAKDGRVLGKIKQTLSVKRVNYNPB	1991 WQTLRLR	; OTHER INFORMATION: Amino acid sequence of the 8836 "BCA" triple fusion protein; ; OTHER INFORMATION: encoded by SEQ ID NO:67 US-11-070-573-68 Query Match Query Match Best Local Similarity 19.6%; Pred. No. 7.8; Matches 113; Conservative 60; Mismatches 158; Indels 245; Gaps 28; Qy 8 AFIESASIKKMPLSYPPLKIAVANWWGGAEBFKKSAMYFILSQRYTITLHQNPNEPSDLV 67
117 LRMPLYYDRIH	cn US/11070573 50168683A1 Lhy Lles tomas tomas tey Stephanie noald Aaron Insecticidal Toxin Comple 118XC1 VUMBR: US/11/070,573 2005-03-02 004-03-02 004-03-02 i 68 srsion 3.2 redB2/TccC3 fusion protei	Query Match 4.7%; Score 111.5; DB 7; Length 4995; Best Local Similarity 19.6%; Pred. No. 7.7; Matches 113; Conservative 60; Mismatches 158; Indels 245; Gaps 28; Qy 8 AFIESASIKKMPLSYPPLKIAVANWWGAEEFKKSAMYFILSQRYTITLHQNPNEPSDLV 67

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APPLICANT: The United States of America as Represented by the APPLICANT: The United States of America as Represented by the APPLICANT: Secretary of the Navy
APPLICANT: Sette, Alessandro
APPLICANT: Carucci, Daniel J.
APPLICANT: Carucci, Daniel J.
APPLICANT: Sidney, John
APPLICANT: Sidney, John
APPLICANT: Southwood, Scott
TITLE OF INVENTION PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE
TITLE REFERENCE: BEI-103X
CURRENT APPLICATION NUMBER: US/10/537,642
CURRENT APPLICATION NUMBER: US 60/431,494
PRIOR PILING DATE: 2002-12-06
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4196 TYDNTWESAFFYFDETKOOFVLINDADHDSGMTQOGIVKNIKKYK---------
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Publication No. US20060165719A1
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ORGANISM: Plasmodium falciparum
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SOFTWARE: PatentIn version 3.2
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99 NLFDYAIGFDELDLRDRYLRMPLYYDRLHHKAESVNDTTAPYKIKPDSLYTLKKPSHHFK 158

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- protein search, using sw model OM protein August 11, 2006, 19:30:38; Search time 120.286 Seconds (without alignments) 1733.289 Million cell updates/sec Run on:

US-10-764-212-20

2458 1 MPQPLLLDAPIDSTHLDETTH.....TSFKIYRKAYQKSLPLLRAI score: Title: Perfect

Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

2589679 segs, 457216429 residues Searched:

2589679 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

geneseqp19908:* geneseqp20008:* geneseqp20018:* geneseqp2003as:* geneseqp2003as:* geneseqp2003bs:* geneseqp1980s:* A Geneseq 8:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

geneseqp2006s:*

SUMMARIES

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	opac	opac	pylori	pylori	pylori	opac	1-1,3	opac	opac	1-1,3	opac	pylori	pylori	opac	17	opac	opac	opac	lori	opac	1-1,3	opac	pylori
ជ	Helicoba	Helicobac	- 5		E.	Helicobac	Alpha-1,	Helicoba	Helicobac	Alpha-1,3	elic	н. ру	H. Dy	Helicobac	Alpha-1,	Helicobac	Helicobac	Helicobac	H. pylor:	Helicobac	Alpha-1,	Helicobac	ď
ptic) ' '		34 H	91 H				_					_				•						35 H
Description	Aeb70149	Aaw86008	Abg30884	Abg30881	3308	1778	273	701	Adj77810	273	701	Abg30887	1308	778	Adj27347	701	Aeb70145	Aeb70147	1308	778	Adj27355	Aeb70141	Aeb70195
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	XBB7014	AAW86008	ABG30884	ABG3088	ABG30886	ADJ77814	ADJ2734	VEB7013	4DJ7781	ADJ2734	AEB7013	ABG30887	ABG30882	ADJ7781;	ADJ2734	AEB7013	4EB7014	AEB7014	ABG30883	ADJ77820	ADJ27355	AEB7014	AEB70195
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Abg30885 H. pylori	Abu52257 Helicobac			Adj27351 Alpha-1,3		Aeb70211 Helicobac	Ħ.	Ä	Ä		ï		Aeb70203 H. pylori	He		He		Abu51720 Helicobac	Aeb70190 H. pylori		Abu51153 Helicobac
ABG30885	ABU52257	AEB70197	ADJ77816	ADJ27351	AEB70137	AEB70211	AEB70154	AEB70199	AEB70205	AEB70201	AEB70202	AEB70204	AEB70203	AEB70206	AEB70193	AEB70212	ABU51151	ABU51720	AEB70190	ABUS1509	ABU51153
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424	418	377	277	277	277	559	227	256	247	245	247	246	246	250	231	545	169	146	171	130	124
69.3	68.4	66.7	49.6	49.6	49.6	47.4	45.9	45.9	43.8	41.3	40.7	40.7	40.5	40.4	39.5	35.2	24.9	21.7	21.7	18.5	17.4
1702.5	1681	1639	1218	1218	1218	1164	1129	1129	1075.5	1015.5	1001.5	1000	966	993	972	864.5	611.5	534.5	532.5	454.5	426.5
24	25	56	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

AL IGNMENTS

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The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polynucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                                                                    Helicobacter pylori fucosyl transferase, FutA, protein, SEQ ID NO: 20.
                                                                                                                                                                                                                                                                                                                                                                          Bezila DJ;
                                                                                                                                      Fucosyltransferase; protein production; enzyme
                                                                                                                                                                                                                                                                                                                                                                          Johnson KF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Claim 2; SEQ ID NO 20; 97pp; English.
            AEB70149 standard; protein; 456 AA.
                                                                                                                                                                     Helicobacter pylori; strain 948.
                                                                                                                                                                                                                                                                                                                           (NEOS-) NEOSE TECHNOLOGIES INC. (UYAL-) UNIV ALBERTA.
                                                                                                                                                                                                                                                                22-JAN-2004; 2004US-00764212.
                                                                                                                                                                                                                                                                                                22-JAN-2004; 2004US-00764212.
                                                                                                                                                                                                                                                                                                                                                                          Simala-Grant J, Taylor D,
                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2005-521417/53.
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                                                                                                                                                                                                    US2005164338-A1.
                                                                          06-OCT-2005
                                                                                                                                                                                                                                  28-JUL-2005.
                                           AEB70149;
AEB70149
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Query Match

Sequence 456 AA;

Length 456; 100.0%; Score 2458; DB 9; us-10-764-212-20.rag

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                                                                                                       61 SNPNBFSSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDRYL 120
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                                                                                                                                                                                                               181 ASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCFENSQ 240
                                                                                                                                                                                                                                                                  241 GYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHAHQN 300
                                                                                                                                                                                                                                                                                                      301 AYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRDLNEP 360
                                                                                                                                                                                                                                                                                                                                                          LVSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRRDHDDLRRDH 420
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                                                                                                                                                                                                                                                                                                                    1 MFQPLLDAFIDSTHLDETTHKPLNVALANWPLKNSEKKGFRDFILHFILKQRYKIILH
                                                                                           61 SNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDRYL
                                                                                                                                               RMPLYYAYLHYKAMLVNDTTSPYKLKALYTLKKPSHKFKENHPNLCAL I HNESDPWKRGF
                                                                                                                                                                                                 181 ASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCFENSQ
                                                                                                                                                                                                                                                   GYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHAHQN
                                                                1 MPQPLLDAFIDSTHLDETTHKPPLNVALANWWPLKNSEKKGFRDFILHFILKQRYKIILH
             Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Alpha-1,3-fucosyltransferase, fucT gene; Lewis X; Lewis Y; sialyl Lewis X; tumour associated antigen; cancer; infection; mucosal disease; diagnosis; fucosylated oligosaccharide.
              Indels
                                                                                                                                                                                                                                                                                                                                                                                                              ERLLSKATPLLELSQNTSFKIYRKAYQKSLPLLRAI 456
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Helicobacter pylori alpha-1,3-fucosyltransferase.
  No. 2.7e-202;
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/note= "Asn is N-glycosylated"
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/note= "Asn is N-glycosylated"
341. .343
/note= "Asn is N-glycosylated"
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ive 0; Mismatches
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Jotes "peptide repeat"

185. .391

Jotes "peptide repeat"

792. .398

Jotes "peptide repeat"

399. .405
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/note= "peptide repeat"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW86008 standard; protein; 464 AA
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Best Local Similarity 100.
Matches 456; Conservative
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This is the amino acid sequence of the novel alpha-1,3-
fucosyltransferase of Helicobacter pylori NGTC 11639, as deduced from the
newly isolated fucT gene (see AAV80321). The enzyme is characterised by 8
c-terminal heptad repeats and by the lack of a transmembrane domain. The
absence of a transmembrane domain allows the enzyme to be readily
released from recombinant host cells. The enzyme can be used in the
production of fucosylated oligosaccharides such as Lewis X, Lewis Y and
sialyl Lewis X, which are structurally similar to certain tumour
associated antigens found in mammals. These glycoconjugates also have
research and diagnosis utility in the development of assays to detect
mammalian tumours. The enzyme can also be used to raise specific
antibodies. Inhibition of abnormal fucT gene product activity can be used
for the treatment of intestinal mucosal disease. (Updated on 17-OCT-2003
to standardise OS field)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YLRMPLYYAYLHYKAMLVNDTTSPYKLK--ALYTLKKPSHKPKENHPNLCALIHNESDPW 176
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               237 ENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   KRGFASFVASNPNAPIRNAFYDALNAI EPVASGGSVRWTLGYKVKNKNEFLSQYKFNLCF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59 LHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                      New isolated alpha-1-3-fucosyltransferase gene - obtained from Helicobacter pylori, used to develop products for the diagnosis and treatment of intestinal mucosal diseases, e.g. tumours.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 78.5%; Score 1929.5; DB 2; Length 464; 79.1%; Pred. No. 7.3e-157; ative 41; Mismatches 46; Indels 9;
                                                                         435. .437
/note= "Asn is N-glycosylated"
            406. .412
/note= "peptide repeat"
note= "peptide repeat"
                                 413. .419
/note= "peptide r
435. .417
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Matches 364; Conservative
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                                                                           Modified-site
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fucosyltransferase gene product activity. The nucleic acid is useful as part of ribozyme and/or triple helix sequences and for alphal, 3-fucosyltransferase gene regulation. Oligosaccharides synthesised using the protein or cell are useful in the development of assays to detect mammalian tumours. The present sequence represents an H. pylori alphal, 3 fucosyltransferase encdoed by the fucT gene. (Updated on 29-AUG-2003 to standardise OS field)

Sequence 476 AA;

888888888888

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416
        LNEPLVSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRRDHDDL
                                                                                                                                                      Enzyme; fucT; alphal,3 fucosyltransferase; oligosaccharide; Lex; Ley; sLex; Helicobacter pylori infection; malignant cell; mammalian tumour.
                                                                                                                                                                                                                                                                                                       Purified transmembrane segment-free alphal,3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
                                       RRDHERLLSKATPLLELSONTSFKIYRKAYOKSLPLLRAI
                                                                                                                                        H. pylori alphal, 3 fucosyltransferase #4.
                                                                                   ABG30884 standard; protein; 476 AA
                                                                                                                                                                              Helicobacter pylori; strain 26695A.
                                                                                                                                                                                                                                                                                                                               Example 3; Fig 6; 37pp; English.
                                                                                                                                                                                                                            07-DEC-2000; 2000US-00733524.
                                                                                                                         (first entry)
                                                                                                                  (revised)
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                                                                                                                                                                                                                                                                                         WPI; 2002-582480/62.
                                                                                                                                                                                                                                                                          Ge Z;
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                                                                                                                29-AUG-2003
21-OCT-2002
                                                                                                                                                                                                            06-JUN-2002
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357
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                                                                               28
                                                                                                                      FENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDBAIDYIKYL
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                                                                                                                                                            118 RYLRMPLYYAYLHYKAMLVNDTTSPYKLK--ALYTLKKPSHKFKENHPNLCALIHNESDP
                                                                                                                                                                                                                176 WKRGFASFVASNPNAPIRNAFYDALNAIBPVASGGSVKNTLGYKVKNKNEFLSQYKFNLC
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356 DIMEPLISIDDLRVMYDDLRVMYDDLRVMYDDLRVMYDDLRVMYDDLRVMYDDLRVMYDD
                                                     1 MPQPLLDAFIDSTHLDETTHK----PPLNVALANWWPLKNSEKKGFRDFILHFILKQRYKI
                                                                                                                                                                                                                                                                                                                                                                         ---DDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bnzyme, fucT; alphal,3 fucosyltransferase; oligosaccharide; Lex; Ley;
sLex; Helicobacter pylori infection; malignant cell; mammalian tumour.
                           24; Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                           44; Indels
Query Match 78.5%; Score 1929; DB 5; Best Local Similarity 77.5%; Pred. No. 8.3e-157; Matches 368; Conservative 39; Mismatches 44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  H. pylori alphal, 3 fucosyltransferase #1.
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The invention relates a purified transmembrane segment-free alpha 1,3fucosyltransferase polypeptide, having a repeat of the sequence: X_1-X_2Leu-Argy (3-X 4-Tyr, where X 1, X 2 and X 4 is a Asp or Asn; and X 3 is

[10, Val or Ala. Also included are the mucleic acid encoding the protein

(including its complement or fragment), a vector containing the nucleic

acid, a host cell containing nucleic acid or vector, an antibody which

selectively binds to the protein and a gene expression system for

comprising a host cell modified with the nucleic acid or its

comprising a host cell modified with the nucleic acid or its

comprising the protein with a substrate such as LackAc-R and GDP-fucose,

contacting the protein with a substrate, to produce oligosaccharides

and purifying the protein with a substrate, to produce oligosaccharides

contacting the host cell with a substrate, to produce oligosaccharides

and purifying the obtained oligosaccharides. The nucleic acid is useful

contacting the notein with a substrate, to produce oligosaccharides

and purifying the nucleic acid using polymerase colid, by contacting a sample with a

cucleic acid probe that hybridisation of the probe; or by

polynucleotide, and detecting hybridisation of the probe; or by

corporably linked to a polynucleotide encoding a dearted polypeptide

cor peptide under conditions which allow expression and secretion of the

cusplicative of infection by Helicobacter pylori or the presence

con malignant cells. The antibody is also useful for diagnasing disorders

con malignant cells. The antibody is also useful for diagnasing disorders

and monitoring disease, and for inhibiting abnormal alphal,3-

06-JUN-2002 Taylor DE,

465. .501 /note= "Region not encoded by sequence appearing as ABK89249" note= "Encoded by AT" /note= "Encoded by GT' Misc-difference 272 Misc-difference 278 Region

US2002068347-A1

07-DEC-2000; 2000US-00733524

98US-00092315. 05-JUN-1998;

UYAL-) UNIV ALBERTA

Ge Z;

WPI; 2002-582480/62.

N-PSDB; ABK89249

Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.

6; Fig 2A; 37pp; English.

fucosyltransferase encdoed by the fucT gene

Sequence 501 AA;

4 9; Gaps DB 5; Length 501; Query Match 78.2%; Score 1921.5; DB 5; Length Best Local Similarity 79.1%; Pred. No. 3.9e-156; Matches 364; Conservative 41; Mismatches 46; Indels 1 MFQPLLDARIDSTHLDETTHK--PPLNVALANWWPLKNSEKKGFRDFILHFILKQRYKII 58

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The invention relates a purified transmembrane segment-free alpha 1,3-fucosyltransferase polypeptide, having a repeat of the sequence: X 1-X 2-Leu-Arg-X 3-X 4-Tyr, where X 1, X 2 and X 4 is Apo or Apn; and X 3 is 11e, Val or Ala. Also included are the nucleic acid encoding the protein (including its complement or fragment), a vector containing the nucleic acid, a host cell containing nucleic acid or vector, an antibody which selectively binds to the protein and a gene expression system for producing transmembrane segment-free alphal, 3-fucosyltransferase, comprising a host cell modified with the nucleic acid or its 356 416 236 296 298 59 LHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDR 119 YLRMPLYYAYLHYKAMLVNDTTSPYKLK --ALYTLKKPSHKFKENHPNLCALIHNESDPW Bnzyme, fucT; alphal,3 fucosyltransferase; oligosaccharide; Lex; Ley; sLex; Helicobacter pylori infection; malignant cell; mammalian tumour. 177 KRGFASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCF 179 KRGFASFVASUPNAPIRNAFYDALNSIBPVTGGGSVRNTLGYNVKNEFLSQYKFNLCF ENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 297 AHQNAYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRD LNEPLVSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRRDHDDL Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides. 456 417 RRDHERLLSKATPLLELSONTSFKIYRKAYOKSLPLLRAI H. pylori alphal, 3 fucosyltransferase #6. ABG30886 standard; protein; 479 AA Helicobacter pylori; strain 763. Example 3; Fig 6; 37pp; English. 07-DEC-2000; 2000US-00733524. 98US-00092315. (revised)
(first entry) (UYAL-) UNIV ALBERTA WPI; 2002-582480/62. Ge Z; JS2002068347-A1. 05-JUN-1998; 29-AUG-2003 21-OCT-2002 raylor DE, ABG30886; 237 357 ABG30886 RESULT ઠે 셤 셤 셤 8 셤 ò 셤 8 셤 셤 8 ò

FutA; FutB; alpha 1-3/4 fucosyltransferase; glycoprotein; glycolipid;

fucose; N-acetylglucosamine; glycoconjugate; enzyme.

Helicobacter pylori

WO2004009838-A2 29-JAN-2004.

Helicobacter pylori strain 1218 FutB protein SeqID

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mammalian tumours. The present sequence represents an H. pylori alphal,3 fucosyltransferase encdoed by the fucT gene. (Updated on 29-AUG-2003 to
enzymatically active portion. The protein and cells are useful for
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Sequence 479 AA;

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                                                                                 1 MFQPLLDAYVESASIEKMAKSKPPPLKIAVANWW--GDEEIKEFKNSVLYFILSQRYTIT 58
                                                                                                                                                                                                                                                                              LKRGFASFVASNPNAPIRNAFYDALNSIEPVTGGGSVRNTLGYNVKNKNEFTSQYKFNLC
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                                                                                                                                                   RYLRMPLYYAYLHYKAMLVNDTTSPYKLK--ALYTLKKPSHKFKENHPNLCALIHNESDP
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      77.2%; Score 1897; DB 5; Length 479; 76.4%; Pred. No. 4.7e-154; ive 42; Mismatches 46; Indels 2
              76.48;
                                 Matches 363; Conservative
                  Best Local Similarity
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Futh and FutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes (FutA and FutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycoproteins and glycollpids with the desired oligosaccharide moieties (i.e. by transfer of a fucose residue to N-acetyfglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial of fucosyltransferase is unaffected by the sialyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, bacterially expressed enzymes offer a large cost saving relative to strain 1218 FutB protein sequence of the invention.

This invention relates to novel isolated polynucleotides and the encoded

Claim 16; SEQ ID NO 6; 72pp; English

New isolated polynucleotide encoding fucosyltransferase protein, usefu for synthesizing oligosaccharide moiety on a protein or lipid that is unglycosylated in its native form or for synthesizing glycolipids.

(NEOS-) NEOSE TECHNOLOGIES INC. 23-JUL-2002; 2002US-0398156P. 08-NOV-2002; 2002US-0424894P. 23-JUL-2003; 2003WO-US023057.

Johnson KF, Bezila DJ;

WPI; 2004-123401/12

N-PSDB; ADJ77813

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1 MFQPLLDAYIESASIEKITSKSPPPLKIAVANWW--GDEEVEFKKULLYFILSQHYTIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       119 YLRMPLYYDRLHHKAESVNDTTSPYKLKPDSLYALKKPSHHFKENHPNLCAVVNNBSDPL
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75.4%; Pred. No. 4.8e-154;
tive 41; Mismatches 47;
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ADJ77814 standard; protein; 485 AA

ADJ77814 RESULT

(first entry)

06-MAY-2004 ADJ77814;

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The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polymucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.
119 YLRMPLYYDRLHHKAESVNDTTSPYKLKPDSLYALKKPSHHFKENHPNLCAVVNNESDPL 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                                                                                                                  299 THPNAYLDMLYENPLNTLDGKAYFYQNLSFKKILDFFKTILENDTIYHDNPFIF---YRD
                                                                                                                                                                                                                                                                                                                              356 INBPLISIDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDL
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75.4%; Pred. No. 4.8e-154;
tive 41; Mismatches 47;
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N-PSDB; AEB70134.
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                          406
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This sequence represents an alpha-1,3/4-fucosyltransferase protein which was used in the method of the invention for producing a fucosylated alycoportein. The method involves contacting a recombinant fucosyltransferase protein with a mixture comprising a donor substrate which comprises a fucosyl residue, and an acceptor substrate on a sylycoprotein, under conditions such that the fucosyltransferase protein catalyzes the transfer of the fucose residue from a donor substrate to the acceptor substrate on the glycoprotein. The method is useful for producing fucosylated glycoprotein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate and acceptor substrate on glycoprotein.
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                                                                                                                                                                                                                                                                                                                                                                                                                                      alpha-1; 3/4-fucosyltransferase; glycoprotein; fucosyltransferase;
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                        LNEPLVSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Helicobacter pylori; strain 1218 FutB
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                                                                                                                                                                                                                                                               ADJ27349 standard; protein; 485
                                                                                                                                                                                                                                                                                                                                                                                            Alpha-1,3/4-fucosyltransferase.
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                                                                                                                                                                                                                                                                                                                                                  (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Johnson KF, Bezila DJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                               fucosyl; fucose.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This invention relates to novel isolated polymucleotides and the encoded polypeptides thereof, which are related to the fucosyltransferase enzymes (PutA and FutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to
                                                                                 YLRMPLYYAYLHYKAMLVNDTTSPYKLK--ALYTLKKPSHKFKENHPNLCALIHNESDPW 176
                                                                                                                                                                                                                          AHONAYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRD 356
                                                                                                                                                                                                                                                                                                                                 416 RVNYDDLRVNCDDLRVNYDDLRVNYBRLLLQNASPLLELSQNTTFKIYRKAYQKSLPLLRA 475
             28
YLRMPLYYDRITHHKAESVNDTTSPYKLKPDSLYALKKPSHHFKENHPNLCAVVNNESDPL
                                                                                                                                                                                                                                        THPNAYLDMLYENPLNTLDGKAYFYQNLSFKKILDFFKTILENDTIYHDNPFIF---YRD
                                                                                                                                KRGFASFVASNPNAPIRNAFYDALNAIBPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCF
                                                                                                                                                                              ENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH
                                    LHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDR
                                                                                                                                            KRGFASFVASNPNAPKRNAFYDALNSIEPVIGGGSVKNTLGYNIKNKSEFLSQYKFNLCF
                                                                                                                                                                                         RNSQGYGYVTEKIIDAYFSHTIPIYWGSPSVAQDFNPKSFVNVCDFKDFDEAIDHVRYLH
                                                                                                                                                                                                                                                                                      New isolated polynucleotide encoding fucosyltransferase protein, usefu
for synthesizing oligosaccharide moiety on a protein or lipid that is
unglycosylated in its native form or for synthesizing glycolipids.
                                                                                                                                                                                                                                                                                                                       -----DDLRRDHDDLRRDHERLLSKATPLLELSQNTSFKIYRKAYQKSLPLLRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FutA; FutB; alpha 1-3/4 fucosyltransferase; glycoprotein; glycolipid;
fucose; N-acetylglucosamine; glycoconjugate; enzyme.
                                                                                                                                                                                                                                                                        LNEPLVSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNY -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Helicobacter pylori strain 1182 FutB protein SeqID 2.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
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N-PSDB; ADJ77809.
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chemically synthesise glycoproteins and glycolipids with the desired oligosaccharide moieties (i.e. by transfer of a fucose residue to Nactification of actylglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial fucosyltransferase is unaffected by the sialyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, bacterially expressed enzymes offer a large cost saving relative to strain 1182 FutB protein sequence of the invention.
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                                                                                                                                                                                                                                                                           31;
                                                                                                                                                                                                                                      DB 8; Length 486;
                                                                                                                                                                                                                                                                         48; Indels
                                                                                                                                                                                                                                    ; Score 1892.5; DB 8;
; Pred. No. 1.2e-153;
41; Mismatches 48;
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75.1%;
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Best Local Similarity
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                                                                                                                                                                            This sequence represents an alpha-1,3/4-fucosyltransferase protein which was used in the method of the invention for producing a fucosylated glycoprotein. The method involves contacting a recombinant fucosyltransferase protein with a mixture comprising a donor substrate which comprises a fucosyl residue, and an acceptor substrate on a glycoprotein, under conditions such that the fucosyltransferase protein catalyzes the transfer of the fucose residue from a donor substrate to the acceptor substrate to
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                                                                                                               Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate acceptor substrate on glycoprotein.
                                                                                                                                                                                                                                                                                                                               31;
                                                                                                                                                                                                                                                                                                        Length 486;
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                                                                                                                                                                                                                                                                                                         DB 8;
                                                                                                                                                                                                                                                                                                        77.0%; Score 1892.5; DB 8
75.1%; Pred. No. 1.2e-153;
tive 41; Mismatches 48;
                                                                                                                                                                                                                                                                 producing fucosylated glycoprotein.
                                         (NEOS-) NEOSE TECHNOLOGIES INC
         23-JUL-2002; 2002US-0398156P. 08-NOV-2002; 2002US-0424894P.
                                                                                                                                                         Claim 1; Fig 1; 84pp; English
                                                                                                                                                                                                                                                                                                                   Best Local Similarity 75.1
Matches 361; Conservative
                                                             Johnson KF, Bezila DJ;
                                                                                 WPI; 2004-132958/13.
N-PSDB; ADJ27344.
                                                                                                                                                                                                                                                                                      Sequence 486 AA;
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AEB70131 standard; protein; 486 AA

RESULT 11 AEB70131 LD AEB7

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose readiue from a donor substrate to an acceptor substrate. The fucosyltransferase polymucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  118
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   297 AHQNAYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -----DDLRRDHDDLRVNYDDLRVNYDDLRVNYDD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            299 THPNAYLDMLYENPLATILDGKAYFYQNLSFKKILDFFKTILLENDTIYHDNPFIF---YRD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 MFQPLLDAYIESASIEKITSKSPPPLKIAVANWW--GDEEVEFKKNILYFILSQHYTIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LHSNPNEPSDLVFGNPLBQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDR
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                                                                                        Helicobacter pylori fucosyl transferase, FutB, protein, SEQ ID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    77.0%; Score 1892.5; DB 9; Length 486; 75.1%; Pred. No. 1.2e-153; tive 41; Mismatches 48; Indels 31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bezila DJ;
                                                                                                                                    protein production; enzyme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Johnson KF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 1; SEQ ID NO 2; 97pp; English
                                                                                                                                                                                     Helicobacter pylori; strain 1182
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Best Local Similarity 75.1%
Matches 361; Conservative
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                                            (first
                                                                                                                                           Fucosyltransferase;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 486 AA;
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                                            06-OCT-2005
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AEB70131;
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RESULT 12 ABG30887

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Helicobacter pylori; strain 1182.
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                                                                                                                                                                                                                            Sequence 454 AA;
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21-OCT-2002
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ABG30882
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fucosyltransferase polypeptide, having a repeat of the sequence: X_1-X_2-
fucosyltransferase polypeptide, having a repeat of the sequence: X_1-X_2-
CC fucosyltransferase polypeptide, having a repeat of the sequence: X_1-X_2-
CC leu-Argy, where X 1, X 2 and X 4 is a spo or Asn; and X 3 is
CLO Also included are the nucleic acid encoding the protein
(including its complement or fragment), a vector containing the nucleic
acid, a host cell containing nucleic acid or vector, an antibody which
selectively binds to the protein and a gene expression system for
producing transmembrane segment-free alphal, 3- fucosyltransferase,
comprising a host cell modified with the nucleic acid or its
enzymatically active portion. The protein and cells are useful for
producing fucosylated oligosaccharides, uch as LackAc-R and GDP-fucose,
contacting the protein with a substrate such as LackAc-R and GDP-fucose,
and purifying the protein with a substrate, to produce oligosaccharides
and purifying the obtained oligosaccharides. The nucleic acid is useful
as a probe for detecting the nucleic acid, by contacting a sample with a
cucleic acid probe that hybridises to alphal, 3-fucosyltransferase
colynucleotide, and detecting hybridisation of the probe; or by
fucosyltransferase-fusion protein, by growing the host cell containing a
cor operably linked to a polynucleotide encoding a desired polypace
cor peptide under conditions which allow expression and secretion of the
fusion protein and isolating the fusion protein. The antibody is useful
cor peptide under conditions which allow expression and detecting the protein in a sample. The presence of the protein in the
sample is indicative of infection by Hellcobacter pylori or the presence
of malignant cells. The antibody is also useful for diagnosing disorders
and monitoring disease, and for inhibiting abnormal alphal,3-
                            454
                                                                              475
                                                       LRVNYDDLRVNYDDLRRDHDDLRRDHERLLSKATPLLELSQNTSFKI YRKAYQKSLPLLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Enzyme; fucT; alphal,3 fucosyltransferase; oligosaccharide; Lex; Ley; sLex; Helicobacter pylori infection; malignant cell; mammalian tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    H. pylori alphal, 3 fucosyltransferase #7.
                                                                                                                                                                                                                                                                                                                                       ABG30887 standard; protein; 454 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Helicobacter pylori; strain 11637.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    07-DEC-2000; 2000US-00733524.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-00092315,
                                                                                                                                                                                                                                                                                                                                                                                                                                                     (revised)
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21-OCT-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             299 THPNAYLDMLYENPLMTLDGKAYFYQNLSFKKILDFFKTILENDTIXH---NHPFIFYRD 355
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|------DNLRINYDNLRVNYDDLRVNYDDLRVNYDDLRINYDDLRINYDDL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ENSOGYGYVTEKILDAYPSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       297 AHQNAYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRD 356
fucosyltransferase gene product activity. The nucleic acid is useful as part of ribozyme and/or triple helix sequences and for alphal, 3-fucosyltransferase gene regulation. Oligosaccharides synthesised using the protein or cell are useful in the development of assays to detect mammalian tumours. The present sequence represents an H. pylori alphal, 3 fucosyltransferase encooled by the fucT gene. (Updated on 29-AUG-2003 to standardise OS field)
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                                                                                                                                                                                                                                                                                                                                       1 MFQPLLDAFIESADIEKWASKSPPPLKIAVANWW--GDEBIKEFKKSTLYFILSQHYTIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 MPQPLLDAFIDSTHLDETTHK--PPLNVALANWWPLKNSEKKGFRDFILHFILKQRYKII
                                                                                                                                                                                                                                                                                                                                                                                                    59 IHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDR
                                                                                                                                                                                                                                                                                                                                                                                                                            KRGFASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                      16;
                                                                                                                                                                                                                         Length 454;
                                                                                                                                                                                                                                                                    47; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        417 RRDHERLLSKATPLLELSQNTSFKIYRKAYQKSLPLLRAI 456
                                                                                                                                                                                                                         Ouery Match 76.9%; Score 1889; DB 5; Best Local Similarity 77.8%; Pred. No. 2.1e-153; Matches 358; Conservative 39; Mismatches 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     H. pylori alphal, 3 fucosyltransferase #2.
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The invention relates a purified transmembrane segment-free alpha 1,3-
C fucosyltransferase polypeptide, having a repeat of the sequence: X 1-X 2-
Leu-Arg-X 3-X 4-Tyr, where X 1, X 2 and X 4 is App or Abn; and X 3 is
Leu-Arg-X 3-X 4 or Ala. Also included are the nucleic acid encoding the protein
C (including its complement or fragment), a vector containing the nucleic
acid, a host cell containing nucleic acid or vector, an antibody which
selectively binds to the protein and a gene expression system for
comprising transmembrane segment-free alphal, 3- fucosyltransferase,
comprising a host cell modified with the nucleic acid or its
comprising a host cell with a substrate such as lackno-R and GDF-fucose,
compacting the protein with a substrate, to produce oligosaccharides
con purifying the protein with a substrate, to produce oligosaccharides
contacting the bost cell with a substrate, to produce oligosaccharides
contacting the bost cell with a substrate, to produce oligosaccharides
contacting the bost cell with a substrate, to produce oligosaccharides
contacting the bost cell with a substrate, to produce oligosaccharides
contacting the bost cell with a substrate, to produce oligosaccharides
contacting the moteleic acid, by contacting a sample with a
nucleic acid probe that hybridises to alphal,3-tucosyltransferase
contacting the nucleic acid using polymerase chain reaction (PCR). The
nucleic acid probe that hybridises to alphal,3-tucosyltransferase
contacting the mucleic acid using polymerase chain reaction (PCR)
amplifying the nucleic acid using polymerase chain reaction (PCR). The
copying transferase-fusion protein, by growing the host cell containing a
cvector operably linked to a polyunclectide encoding a desired polypeptide
cor peptide under conditions which allow expression and secretion of tusion protein and sellaring the fusion protein.
C or detecting the protein in a sample. The presence of the protein or cell ace useful in the development of capacial is useful and monitoring disease gene regulation. Olig
                                                                                                  Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
                                                                                                                                                                               Claim 6; Fig 6; 37pp; English.
                                                 WPI; 2002-582480/62.
Taylor DE,
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Sequence 485 AA;

standardise OS field)

118 59 LHQNPNEPSDLVFGSPIGSARKILSYQNAKRVFYTGENESPNFNLFDYAIGFDENDFRDR 118 176 179 KRGFASFVASNPNAPKRNAFYDVLNSIEPVIGGGSVKNTLGYNIKNKSEPLSQYKFNLCF 238 ENSOGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 296 28 1 MFQPLLDAYIESASIEKITSKSPPPLKIAVANWW--GDEEVEFKKNILYFILSQHYTIT YLRMPLYYAYLHYKAMLVNDTTSPYKLK--ALYTLKKPSHKFKENHPNLCALIHNESDPW 239 ENSQGYGYVTEKIIDAYFSHTIPIYWGSPSVAQDFNPKSFVNVCDFKDFDEAIDHVRYLH LHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDR KRGFAS FVASNPNAPI RNAFYDALNA I EPVASGGS VKNTLGYKVKNKNEFLSQYKFNLCP 1 MFQPLLDAFIDSTHLDBTTHK--PPLNVALANWWPLKNSBKKGFRDFILHFILKQRYKII Gaps 31; Length 485; 48; Indels DB 5; 76.7%; Score 1885.5; DB 5 75.1%; Pred. No. 4.7e-153; tive 41; Mismatches 48; Matches 361; Conservative Local Similarity 29 119 237 177 Query Match 셤 ሯ 셤 ઠે 셤 ð 셤 ઠે 셤 ઠ

Pulsa invalidation interpolation of the fucosyltransferase enzymes (FutA and FutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycoproteins and glycolipids with the desired oligosaccharide moieties (i.e. by transfer of a fucose residue to N-acetyglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial fucosyltransferase is unaffected by the sialyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, bacterially expressed enzymes offer a large cost saving relative to armamalian expression systems. This polypoptide sequence is an H. pylori etrain 1111 FutA protein sequence of the invention. 299 THPNAYLDMLYENPLNTLDGKAYFYQNLSFKKILDFFKTILENDTIYHDNPFIF---YRD 355 454 435 This invention relates to novel isolated polynucleotides and the encoded New isolated polynucleotide encoding fucosyltransferase protein, usefu for synthesizing oligosaccharide moiety on a protein or lipid that is unglycosylated in its native form or for synthesizing glycolipids. 412 ------DHDDLRRDHERLLSKATPLLELSQNTSFKIYRKAYQKSLPLLR Futh, Futh; alpha 1-3/4 fucosyltransferase; glycoprotein; glycolipid; fucose; N-acetylglucosamine; glycoconjugate; enzyme. Helicobacter pylori strain 1111 FutA protein SeqID 4. Claim 16; SEQ ID NO 4; 72pp; English ADJ77812 standard; protein; 432 AA. (NEOS-) NEOSE TECHNOLOGIES INC. 08-NOV-2002; 2002US-0424894P. 23-JUL-2003; 2003WO-US023057 23-JUL-2002; 2002US-0398156P (first entry) 3 Bezila WPI; 2004-123401/12. Helicobacter pylori N-PSDB; ADJ77811 WO2004009838-A2 455 A 455 476 A 476 Johnson KF, 06-MAY-2004 ADJ77812; RESULT 14 ADJ77812 셤 g Š ò 8

1 MPQPLLDAFIDSTHLDE-TTHKPPLNVALANWWPLKNSEKKGFRDFILHFILKQRYKIIL 59 42; Indels 36; Length 432; Query Match 73.9%; Score 1817; DB 8; Best Local Similarity 76.7%; Pred. No. 3.1e-147; Matches 352; Conservative 29; Mismatches 42; Sequence 432 AA; ð 236 AHQNAYLDMLYENPLATIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRD 356

297

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Gaps

which comprises a fucosyl residue, and an acceptor substrate on a glycoprotein, under conditions such that the fucosyltransferase protein eatalyzes the transfer of the fucose residue from a donor substrate to the acceptor substrate on the glycoprotein. The method is useful for producing fucosylated glycoprotein.

Sequence 432 AA;

888888

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119
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                                                                                    LRMPLYYAYLHYKAMLVNDTTSPYKLK--ALYTLKKPSHKFKENHPNLCALIHNESDPWK 177
                                                                                                                                                                                    NSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHA 297
                                                                                                                                                                                                                                  298 HQNAYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRDL 357
                                                                                                                                                                                                                                                                                 358 NEPLYSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRRDHDDLR 417
             28
119 LRMPLYYAYLHYKAELVNDTTSPYKLQPDSLYALKKPSHHPKENHPNLCAVVNNESDPLK
                                                                                                                                                  RGFASEVASNPNAPRRNAFYEALNAIEPVAGGGSVKNTLGYNVKNKSEFLSQYKFNLCFE
                                                                                                                                                                                                HONAYLDMHYENPLNTIDGKAYFYQNLSFKKILDFFKTILENDTIYHDNPFIF---YRDL
                                     HSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDRY
                                                                                                                                     RGFASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNBFLSQYKFNLCFE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    alpha-1; 3/4-fucosyltransferase; glycoprotein; fucosyltransferase;
                                                                                                                                                                                                                                                                                               ||| ||:
|NEPSVSI------DGLRVMYDDLRVMYDDLRVMYDDLRVWY
                                                                                                                                                                                                                                                                                                                                  418 RDHERLLSKATPLLELSQNTSFKIYRKAYQKSLPLLRAI 456
                                                                                                                                                                                                                                                                                                                                              ---BRLLQNASPLLELSQNTTFKIYRKAYQKSLPLLRAI 426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Helicobacter pylori; strain 1111 FutA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    acceptor substrate on glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                        Ş
                                                                                                                                                                                                                                                                                                                                                                                                                     ADJ27347 standard; protein; 432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Alpha-1,3/4-fucosyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (NEOS-) NEOSE TECHNOLOGIES INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23-JUL-2002; 2002US-0398156P. 08-NOV-2002; 2002US-0424894P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-JUL-2003; 2003WO-US023155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Johnson KF, Bezila DJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2004-132958/13.
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This sequence represents an alpha-1,3/4-fucosyltransferase protein which was used in the method of the invention for producing a fucosylated glycoprotein. The method involves contacting a recombinant fucosyltransferase protein with a mixture comprising a donor substrate

Claim 1; Fig 2; 84pp; English

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                                                                                                                                                                                            239 NTQCYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHT 298
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                                                                                                                 1 MPQPLLDAFIDSTHLDE-TTHKPPLNVALANWWPLKNSEKKGFRDFILHFILKQRYKIIL
                                                                          1 MFQPLLDAPIESAPLKKWPLNLPPLKIAVANWW--GDEBIKKFKKSVLYFILSQHYTITL
                                                                                                                                                                             LRMPLYYAYLHYKAMLVNDTTSPYKLK--ALYTLKKPSHKFKENHPNLCALIHNESDPWK
                                                                                                                                                                                                                                                                                               NSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHA
                                                                                                                                                                                                                                       RGFASFVASNPNAP1RNAFYDALNA1EPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCFE
                              Gaps
                              36;
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356 NEPSVSI------DGLRVNYDDLRVNYDDLRVNYDDLRVNY---
   Length 432;
                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         418 RDHERLLSKATPLLELSQNTSFKIYRKAYQKSLPLLRAI 456
73.9%; Score 1817; DB 8; 76.7%; Pred. No. 3.1e-147; iive 29; Mismatches 42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ---ERLLQNASPLLELSQNTTFKIYRKAYQKSLPLLRAI
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               Best Local Similarity 76.79
Matches 352; Conservative
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GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
                    Copyright
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OM protein - protein search, using sw model

August 11, 2006, 19:37:09; Search time 21.4069 Seconds (without alignments) 2049.570 Million cell updates/sec Run on:

US-10-764-212-20 2458 1 MFQPLLDAFIDSTHLDETTH......TSFKIYRKAYQKSLPLLRAI 456 Title: Perfect score:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table: Sequence:

283416 seqs, 96216763 residues Searched: Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

1: pir1:* 2: pir2:* 3: pir3:* 4: pir4:* PIR 80:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		٠			SUMMAKIES	
Result No.	Score	& Query Match	Length	DB	OI.	Description
				-		
н	2005	81.6	454	~	B71914	alpha (1,3)-fucosy
7	1929	78.5		N	C64601	fucosyltransferase
m	1801.5	73.3		7	G71862	alpha-(1,3)-fucosy
4	1718	69.5	425	7	C64567	fucosyltransferase
S	189.5	7.7	346	~	T44327	hypothetical prote
9	189.5	7.7	7 2657	~	T18497	cal
7	164.5	6.7		7	T09079	probable chloroqui
80	157.5	6.4	183	~	C97832	alpha-(1,3)-fucosy
0	155	6.3	2819	~	T09080	probable chloroqui
10	147.5	9.9	513	~	F96533	probable fucosyltr
11	143.5	5.8	-	~	T18438	hypothetical prote
12	143	5.8		~	D71616	ribosome releasing
13	138	5.6		~	S55498	alpha (1,3/4) -fucos
14	138	5.6		~	T34073	paranemin - chicke
15	137.5	5.6	1840	N	T29091	transitin - chicke
16	133	5.4		Ω.	T18416	hypothetical prote
17	133	5.4		~	G71609	
18	131.5	5.3	2269	~	T18472	
19	130.5	ω. 		~	T18460	hypothetical prote
20	129.5	5.3		~	B34434	arylphorin beta ch
21	128.5	5.2		~	A45156	alpha-(1,3)-fucosy
22	128.5	5.	364	~	139048	alpha (1,3) fucosy
23	127	5.		7	G90587	lipoprotein [impor
24	126.5	5.1		~	T16799	hypothetical prote
25	125.5	5.1	2013	~	C71610	probable membrane
26	124	5.0		~	T28306	ORF MSV145 hypothe
27	N	5.0		~	B81277	hypothetical prote
28	123.5	5.0	451	~	T23491	
59	121.5	4.	2910	7	T28156	DNA-directed RNA p

hypothetical prote hypothetical prote hypothetical prote	alpha-(1,3)-fucesy alpha-1,3-fucesylt hypothetical prote	protein with 5'-3' conserved hypothet glucose-6-phosphat	hypothetical prote hypothetical prote hypothetical prote	hypothetical prote hypothetical prote hypothetical prote HPR1 protein - yea
C82931 T18499 E71604	B97832 A57596 T50364	A71621 H82932 S40259	H96742 H82943 H90567	T18482 AH1879 C71622 S51866
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30	, w w w	36 37 38	39 40 41	4 4 4 4 2 6 4 6

ALIGNMENTS

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RESULT 1
B71914
alpha (1,3)-fucosyltransferase - Helicobacter pylori (strain 199)
C;Species: Helicobacter pylori
A;Variety: strain J99
C;Date: 12-Feb-1999 #sequence revision 12-Feb-1999 #text change 09-Jul-2004
C, Accession: B71914
R;Alm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, B.D.; Doig, P.C.; Smith, D.R.;
; Ives, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; Vovis, G.F.; 7
Nature 397, 176-180, 1999
A, Title: Genomic sequence comparison of two unrelated isolates of the human gastric path
A; Reference number: A71800; MUID:99120557; PMID:9923682
A;Accession: B71914
A;Status: preliminary
A; Molecule type: DNA
A;Residues: 1-454 <arn></arn>
A;Cross-references: UNIPROT:Q9ZLI3; UNIPARC:UPI00000D3665; GB:AE001491; GB:AE001439; NID:
A;Experimental source: strain J99
C;Genetics:
A;Gene: fucT

'n 120 238 61 QNPNEPSDLVFGSPIGSARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFRDYL 120 178 240 299 QNAYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRDLN 358 EPLVSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRRDHDDLRR 418 9 61 SNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDRYL 181 GFASFVASNPNAPIRNAFYDALNSIEPVTGGGSVKOTLGYNVKNKSEFLSQYKFNLCFEN 301 PNAYLDMLYENPLNYTLDGKAYFYQNLSFKKILDFFKTILENDTIXHDNPFIF---YRDLN 179 GFASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCFEN RMPLYYAYLHYKAMLVNDTTSPYKLK - - ALYTLKKPSHKFKENHPNLCALIHNESDPWKR 12; Gaps Length 454; Indels 81.6%; Score 2005; DB 2; 82.3%; Pred. No. 5.7e-126; iive 30; Mismatches 39; Query Match 81.6% Best Local Similarity 82.3% Matches 377; Conservative 121 359 ò 셤 Š g δ g 8 8 ò g g ò ò

358

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26 99 234 236

296 294

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Cispectes: Helicobacter pylori
Cispectes: Helicobacter pylori
Cispectes: Helicobacter pylori
Cispectes: Og-Aug-1997 #sequence_revision 09-Aug-1997 #text_change 09-Jul-2004
Cispectes: Offices: Offices: Ogical Particles of Stromb. Offices: Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles of Stromb. Ogical Particles
                                A;Accession: G71862
A;Status: preliminary
A;Molecule type: DAS
A;Residus: 1-436 <ARN>
A;Cross-references: UNIPROT:Q9ZKD7; UNIPARC:UPI00000D36D2; GB:AE001528; GB:AE001439; NID:
A;Experimental source: strain J99
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Pest Local Similarity 75.8%; Pred. No. 1.8e-112;
Matches 350; Conservative 30; Mismatches 41; Indels 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DLRRDHERLLSKATPLLELSONTSFKIYRKAYOKSLPLLRAI
A; Reference number: A71800; MUID: 99120557; PMID: 9923682
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C;Species: Helicobacter pylori
A;Variety: strain J99
C;Bacter 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004
C;Accession: G71862
C;Accession: G71862
E;AL, Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, B.D.; Doig, P.C.; Smith, D.R.; Ives, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; Vovis, G.F.; Nature 397, 176-180, 1999
A;Title: Genomic sequence comparison of two unrelated isolates of the human gastric path
                                                                                                                                                                                                                                                                                                                C;Species: Helicobacter pylori
C;Date: 09-Aug-1997 #sequence_revision 09-Aug-1997 #text_change 09-Jul-2004
C;Accession: G4601
R;Tomb, J.F.; White, O.; Kerlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, R.D.
Peterson, S.; Loftus, B.; Richardson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McKenne
son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey, L.
Nature 388, 539-547, 1997
A;Authors: Wallin, E.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser, C.
A;Title: The complete genome sequence of the gastric pathogen Helicobacter pylori.
A;Reference number: A64520; MUID:97394467; PMID:9252185
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A;Molecule type: DNA
A;Molecule type: DNA
A;Recidues: 1-476 <TONS
A;Cross-references: UNIPROT:O25366; UNIPARC:UPI00000D70CB; GB:AE000578; GB:AE000511; NIC
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                                           DHERLLSKATPLLELSQNTSFKIYRKAYQKSLPLLRAI 456
                                                                               414 ---RILLONASPLLELSONTTFKIYRKAYOKSLPLIRTI 448
                                                                                                                                                                                                                                                                                   fucosyltransferase - Helicobacter pylori (strain 26695)
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hypothetical protein C0780w - malaria parasite (Plasmodium falciparum)
C;Species: Plasmodium falciparum
C;Species: Plasmodium falciparum
C;Species: Plasmodium falciparum
C;Species: Doct-1999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
C;Accesion: T18497
R;Lawson, D; Bowman, S; Barrell, B.
Submitted to the EMBL Data Library, August 1997
A;Refense number: Z18935
A;Refense number: Z18497
A;Refense: preliminary; translated from GB/EMBL/DDBJ
A;Accession: T18497
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Cossion: 1-2657 < LAM>A;Residues: 1-2657 < LAM>A;Cossion: T18497
A;Cross-references: UNIPROT:O77380; UNIPARC:UPI000017CC3A; EMBL: Z98551; NID:e1331903; PII
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A;Residues: 1-2708 <SUX>
A;Cross-references: UNIPROT:O15791; UNIPARC:UP10000079A61; EMBL:AF030692; NID:92642513; I
A;Experimental source: strain 7G8; from Brazil
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C; Date: 13-Aug-1999 #sequence_revision 13-Aug-1999 #text_change 09-Jul-2004
C; Accession: T09079
C; Accession: T09079
C; Accession: T09079
A; Su, X.Z.; Kirkman, L.A.; Fujioka, H.; Wellems, T.E.
Cell 91, 593-603, 1997
A; Title: Complex polymorphisms in an 330 kDa protein are linked to Chloroquine-resistant
A; Reference number: Z16556; MUID:98054002; PMID:9393853
A; Recession: T09079
A; Status: translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                : |||| : |||| : |||| : |||| : |||| : |||| : :| : : : :||| : :|| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :|| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :|| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :|| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :|| : :||| : :||| : :||| : :|| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :||| : :|| 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           38 NHLAVCCIDKNGNTDDYSEHVLPAEVLELREYVPEKLVHSTYNKEKVKSYLFVLTRKYVL 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                205 GDNK------NYDDNKNNYGDNNNNYG----DYNN---NYDDNRSNYDD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  161 NHPNLCALIHN-ESDPWKRG--FASFVASNPNAP--IRNAFY--DALMAIEPVASGGSVK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7.7%; Score 189.5; DB 2; Length 2657; 27.0%; Pred. No. 0.00032; tive 56; Mismatches 110; Indels 77;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           302 FNKEDLFLE-HQNIYKKIKKEMSTDDQDDVPLI 333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 424 LSKATPLLELSQNTSFKIYRKAY---QKSLPLL 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 27.09
Matches 90; Conservative
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C;Keywords: toxin resistance
    327 QFKSEGFVQ 335
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          C;Genetics:
A;Map position: 3
A;Note: C0780w
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    셤
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C; Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004
C; Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 09-Jul-2004
C; Accession: T44327
R; Yamasaki, S.; Shimizu, T.; Hoshino, K.; Ho, S.T.; Shimada, T.; Nair, G.B.; Takeda, Y.
R; Yamasaki, S.; Shimizu, T.; Hoshino, K.; Ho, S.T.; Shimada, T.; Nair, G.B.; Takeda, Y.
R; Yamasaki, S.; Shimizu, T.; Hoshino, K.; Ho, S.T.; Shimada, T.; Nair, G.B.; Takeda, Y.
R; Yamasaki, S.; Shimizu, G.B.; Hoshino, K.; Ho, S.T.; Shimada, T.; Nair, G.B.; Takeda, Y.
A; Reference number: 222749; MUID:99453293; PMID:10521656
A; Raccession: T44327
A; Raccession: T44327
A; Reference number: Disparate from GB/EMBL/DDBJ
A; Residues: 1-346 < YAM>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18;
179 LKRGFASFVASNANAPMRNAFYDALNSIEPVTGGGSVRNTLGYKVGNKSEFLSQYKFNLC 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  239 FENSQGYGYYTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIKYL 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               415
                                                                                                                                                                                                                                                                                                                                 WKRGFASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLC 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYL 295
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358 DLHKPLVSI------ 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 64 NMPKILPLPEHIKKSYLILSESAFIRPDNYDANKHAYFN-----KVFTWS---DDLV 112
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KPSHKFKENHPNLCALIHNESDPWKRGFASFVASNPNAPIRNAFYDALNAIBPVASGGSV 212
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                214 QKILGRSYPSYKGWVEHKKPIMAQYKPSICYENAKDIPGYITEKIFDSFFAGCVPVYWGA 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       265 PSVAKDFNPK-SFVNVHDFNNFDEAI------DYIRYLHAHQNAYLDMLYENPLNTI 314
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               356 DLNEPLVSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRRDHDD
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A;Residues: 1-2819 <SUX>
A;Cross-references: UNIPROT:O15792; UNIPARC:UP100000785E5; EMBL:AF030693; NID:g2642515; I
A;Experimental source: strain HB3; from Honduras
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ritheologis, A.; Ecker, J.R.; Palm, C.J.; Federspiel, N.A.; Kaul, S.; White, O.; Alonso, Chin, C.W.; Chung, M.K.; Conn, L.; Conway, A.B.; Conway, A.R.; Creasy, T.H.; Dewar, K.; ansen, N.F.; Hughes, B.; Huizar, L. Nature 408, 816-820, 2000 A.S.; J. Johnson-Hopson, C.; Khan, S.; Khaykin, E.; Kim, C.; C.A.; Li, J.H.; Li, Y.; Lin, X.; Liu, S.X.; Liu, Z.A.; Luros, J.S.; Maiti, R.; Marziali,
                                                                                                                                                                                R;Su, X.Z.; Kirkman, L.A.; Fujioka, H.; Wellems, T.E.
Cell 91, 593-603, 1997
A;Title: Complex polymorphisms in an 330 kDa protein are linked to Chloroquine-resistant
A;Reference number: Z16556; MUID:98054002; PMID:9393853
A;Accession: T09080
A;Accession: To9080
A;Status: translated from GB/EMBL/DDBJ
                         probable chloroquine resistance protein CG2 (strain HB3) - malaria parasite (Plasmodium C;Species: Plasmodium falciparum
C;Date: 13-Aug-1999 #sequence_revision 13-Aug-1999 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        649
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      85 QNTKRVPYTGENEVPNFNLFDYALGF-----DELDFNDRYLRMPLYYAYLHYKAMLV- 136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                751
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C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Mar-2001 #sequence_revision 02-Mar-2001 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          920 D---NWADQGGANANDHDDAVANNHDDDNANNHDDSSANNHDDNANNHDDNANKHTNYLANKDN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          233 NLCFENSQ--GYGYVTEKILDAYFSH----TIPIYWGSPSVAKDFNPKSFVNVHDFNNF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                752 KKENENSYILRYTFYNQKI-DLPINMINEKLVPKCHWDS------DIFINMISLSYN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ----DFPKNI----LEN----DTIYHCNDAHYSALHRDLNEPLVS---VDDLRRDHD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----NDTTSPYKLKALY----TLKKPSHKFKENHPNLCAL-----IHNESD
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  110 BLK-----CQDTNGNIK---FDQMN-----DHVKNDHTNYYQNNNIFNLLTLIKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ---RYKIILHSNPNEPSDLVFGNPLEQARKILSY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 6.3%; Score 155; DB 2; Length 2819;
Best Local Similarity 21.7%; Pred. No. 0.069;
Matches 113; Conservative 69; Mismatches 173; Indels 166;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  977 YNSKGTFPENTLDDKKNCSYQKNFVSVFYFTIYVNKNTPLL 1017
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          --SKAT---PLLELSQNTSFK----IYRKAY-QKSLPLL 453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           35 KNSEKKGFRDFILHFILKQ---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A,Gene: cg2
C,Keywords: toxin resistance
                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
                                                                                                                                                               C; Accession: T09080
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A;Cross-references: UNIPROT:Q92GR3; UNIPARC:UPI0000CBFA7; GB:AE006914; PIDN:AAL03597.1;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Accession: C97832
R;Ogata, H.; Audic, S.; Renesto-Audiffren, P.; Fournier, P.E.; Barbe, V.; Samson, Science 293, 2093-2098, 2001
A;Title: Mechanisms of Evolution in Rickettsia conorii and Rickettsia prowazekii. A;Reference number: A97700; MUID:21442074; PMID:11557893
A;Accession: C97832
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      217 GYKV--KNKNEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIP-IYWGSPSVAKDFNP 273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STIIPKEKTTREWLSKCKFVIAPENKTSEGYVTAKPFQAYLAGAVHIIYYADKSYIKDVNP 122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      746 KKENENSYILRYTFYNQKI-DLFINMINBKLVPKCHWDS------DIFINMISLSYN 795
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          D-----LRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRRDHDDLRRDHERLL 424
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                                                                             55 KNKNK----IILKFILMNLNGNIQVFMLPFSYFSNKKKKKKKNIIFKN-----ILSY 602
                                                                                                                                                               -----DELDFNDRYLRMPLYYAYLHYKAMLV- 136
                                                                                                                                                                                                                                                                                                                                   137 -----NDTTSPYKLKALY----TLKKPSHKPKENHPNLCAL------IHNESD 174
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C,Species: Rickettsia conorii
C,Date: 30-Sep-2001 #sequence_revision 30-Sep-2001 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SVLAYKRSKYNPNKTYFACFLVSNGIEEPENDGCIARNRFFHKLSLYKKVVSGSKYLNTE 62
                                                                                                                                                                                                                                                                                                                                                                              704 ELK-----CQDTNGNIK---YDQMN------DHVKNDHTNYYQNNNIFNLLIKL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   233 NLCFENSQ--GYGYVTEKILDAYFSH-----TIPIYWGSPSVAKDFNPKSFVNVHDFNNF
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KNSEKKGFRDF1LHF1LKQ-----RYK11LHSNPNEPSDLVFGNPLEQARK1LSY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              973 NDKDNYNSKGTFPENTLDDKKNCSYQKNFVSVFTIYVNKNTPLL 1018
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                                                                                                                                                                   85 ONTKRVFYTGENEVPNFNLFDYAIGF
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ribosome releasing factor (OO, TP) PFB0390w [imported] - malaria parasite (Plasmodium fall NiAlternate names: ribosome recycling factor Cipace and Plasmodium falciparum falciparum falciparum falciparum falciparum falciparum Cipate: 13-Nov-1998 #sequence_revision 13-Nov-1998 #text_change 09-Jul-2004 Cipate: 13-Nov-1998 #sequence_revision 13-Nov-1998 #text_change 09-Jul-2004 Rigardner, M.J. Tettelin, H.; Carucci, D.J.; Cummings, L.M.; Aravind, L.; Koonin, B.V.; S.; Pertea, M.; Salzberg, S.; Zhou, L.; Sutton, G.G.; Clayton, R.; White, O.; Smith, H.O.; Science 282, 1126-1132, 1998
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A.Description: Molecular cloning and expression of bovine alpha (1,3/4)-fucosyltransferae A.Reference number: $55498
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A;Cross-references: UNIPROT:096173; UNIPARC:UPI00000786F0; GB:AE001391; GB:AE001362; NID: C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Title: Chromosome 2 sequence of the human malaria parasite Plasmodium falciparum A;Reference number: A71600; MUID:99021743; PMID:9804551
241 GYGYVTEKILDAYFSH--TIPIYMGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHAH 298
                                                                                                                                                                                                                                                                                              344 HCNDAHYSAL----HRDLNEPL-----VSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYD 393
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                                                                                                                                                                                                                                                                                                                                        alpha(1,3/4)-fucosyltransferase - bovine
C;Species: Bos primigenius taurus (cattle)
C;Date: 01-Aug-1995 #sequence_revision 01-Sep-1995 #text_change 09-Jul-2004
                                                                    622 IHNNNSSYLQNNNIFHLSDILLY-----YMKKDYIKIYEFLTFRTIIEKRQMTNLM
                                                                                                                                                 299 QNAYLD------MLYENPLNTIDGKAGFYQDLSFEKILDFFK---NILENDTIY
                                                                                                                                                                                           196 FYDALMAIBPVASGGSVKWTLGYKV--KNKNBFLSQYKF-NLCFENSQGYGYVTBKILDA
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Rizzo, M.; Rooney, T.; Rowley, D.; Sakano, H.
A; Authors: Salzberg, S.L.; Schwartz, J.R.; Shinn, P.; Southwick, A.M.; Sun, H.; Tallon, Ker, M.; Wu, D.; Yu, G.; Fraser, C.M.; Venter, J.C.; Davis, R.W.
A; Title: Sequence and analysis of chromosome 1 of the plant Arabidopsis.
A; Reference number: A86141; MUID:21016719; PMID:11130712
A; Recession: P96533
                                                                                                                                                                                                                                                                                                                                        A; Cross-references: UNIPROT: Q9FX97; UNIPARC: UPI000000BD87; GB: AE005173; NID: 910120428;
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A;Cross-references: UNIPROT:077332; UNIPARC:UPI000017CC26; EMBL:298547; NID:e1325376; C;Genetics:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FNLCFENSQCYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNP--KSFVNVHDFNNFDEAI 289
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        368 LWNSPISNLFKÖEYIYM------LMNEIKKNNKKHIVHEEBFITYLKQIKLLQL 415
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    6.0%; Score 147.5; DB 2; Length 5
10.9%; Pred. No. 0.023;
[ve 30; Mismatches 57; Indels
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A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
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A;Molecule type: DNA
A;Residues: 1-513 <STO>
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A, Gene: F14J22.8
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Best Local S:
Matches 51
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A; Note: C0415c
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Submitted to the EMBL Data Library, April 1996
A;Reference number: 220560
A;Accession: T129091
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Rolecule type: mRNA
A;Rolecule type: mRNA
A;Rolecule type: mRNA
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A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Molecule type: mLNA
A;Residues: 1-1606 <HEM>
A;Cross-references: UNIPROT:057613; UNIPARC:UPI000017C028; EMBL:U59287; NID:g2828800; PI
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'Species: Gallus gallus (chicken)
'Species: Gallus gallus (chicken)
'Species: Gallus gallus (chicken)
'Species: Gallus gallus (chicken)
'Accession: T34073
'Hemken, P.M.; Bellin, R.M.; Sernett, S.W.; Becker, B.; Huiatt, T.W.; Robson, R.M.
'Biol. Chem. 272, 32489-32499, 1997
'Title: Molecular characteristics of the novel intermediate filament protein paranemin.
'Reference number: Z21471; MUID:98070426; PMID:9405460
A;Cross-references: UNIPROT:Q9TQQ3; UNIPARC:UP10000088B27; EMBL:X87810; NID:g860807; PID
C;Superfamily: galactoside 3(4)-L-fucosyltransferase
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C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
C;Accession: T29091
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No. 0.57; Matches 26; Conservative 18; Mismatches 20; Indels 3;
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Search completed: August 11, 2006, 19:45:53 Job time : 24.4069 secs

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GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
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OM protein - protein search, using sw model

Run

(without alignments) 2630.023 Million cell updates/sec August 11, 2006, 19:30:58 ; Search time 160.382 Seconds ö

US-10-764-212-20

2458 1 MFQPLLDAFIDSTHLDETTH.....TSFKIYRKAYQKSLPLLRAI Perfect score: Sequence:

456

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

2849598 seqs, 925015592 residues Searched:

2849598 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

UniProt_7.2:*
1: uniprot_sprot:*
2: uniprot_trembl:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description	Q91884 helicobacte			030511 helicobacte							_	Q54pj9 dictyosteli	_							7		•									Q8ilb9 plasmodium
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SUMMAKIES	8	Q9L8S4 HELPY	MELI3EQ	O25366_H	030511 H	Q6ST35_H	Q9ZKD7_HELPJ	O25142_HELPY	032631_HELPY	Q5L9S6_B	Q7VFA1 HELHP	Q2IE19_9	Q54PJ9_DICDI	OSUD63 M	Q54PH9_DICDI	087156_V	077380_PLAF7	QSSFA8_D	Q54PK0 D	054L56_D		Q8IKL3_P	087135_VIBCH	Q86NA8 C						Q93WS0 M		Q8ILB9_P
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df	Query Match	100.0		78.5	78.0	77.8	ë.	6.69	59.1	18.7	17.8	14.1	8.9	•	8.0	7.7	7.7	7.7	7.6	7.6	7.5	7.5	•	•	•	7.1	7.0	6.9	6.9	6.9	6.9	6.9
	Score	2458	2005	1929	1917.5	1912	1801.5	1718	1452	460.5	437	345.5	218	200	196.5	189.5	189.5	189	187.5	187.5	185	183.5	179.5	177.5	176.5	173.5	172.5	170.5	170.5	169.5	169	169
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Q8L5D1 PHYPA Q54PKZ_DICD1 Q6A2X3 PHYPA Q6G5X3_MEDTR Q9ST51_PHAAU Q599J4_9ROSI Q1579J4_9ROSI Q1579H9_RICS1 Q7P9H9_RICS1 Q7P9H9_RICD1 Q7P9H9_RICD1 Q81JH4_PLAP7 Q81JH4_PLAP7 Q81EC4_PLAP7	
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# ALIGNMENTS

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GO; GO:0016020; C:membrane; IEA.

GO; GO:0008417; F:fucosyltransferase activity; IEA.

GO; GO:0016757; F:transferase activity, transferring glycosyl. .; IEA.

GO; GO:0016757; F:transferase activity, transferring glycosyl. .; IEA.

GO; GO:0016757; F:transferase activity, transferring glycosyl. .; IEA.

GO; GO:0016757; F:transferase activity, transferring glycosyl. .; IEA.

GO; GO:0016757; F:transferase activity, transferase.

Glycosyltransferase; Transferase.

Glycosyltransferase; Transferase.

Glycosyltransferase; Transferase.

Glycosyltransferase; Transferase.
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NUCLECTIDE SEQUENCE.
STRAIN=UR948;
MEDLINE=20138242; PubMed=10671538; DOI=10.1074/jbc.275.7.4988;
MEDKO D.A., Wang G., Palcic M.M., Taylor D.E.;
"Cloning and characterization of the alpha(1,3/4) fucosyltransferase
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
NCBI_TaxID=210;
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Rasko D.A., Wang G., Palcic M.M., Taylor D.E.;
Submitted (FEB-2003) to the EMBL/GenBank/DDBJ databases.
                                                   01-0CT-2000, integrated into UniProtKB/TrEMBL.
01-UUN-2003, sequence version 2.
07-FBB-2006, entry version 17.
1010-113/4-fucosyltransferase.
                 462 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Mismatches
                                                                                                                                                                                                                                                                                                                                                 of Helicobacter pylori.";
J. Biol. Chem. 275:4988-4994(2000).
                 PRT;
                 PRELIMINARY;
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Matches 456; Conservative
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               QFL8S4_HELPY
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                                     Q9L8S4;
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301 PNAYLDMLYENPLHTLDGKAYFYQNLSFKKILDFFKTILBNDTIYHDNPFIF---YRDLN 357
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                                                                                                                                                                                                                                                                                                                                                                                                                 BPLVSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRRDHDDLRR 418
61 QNPNEPSDLVFGSPIGSARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYL 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
STRAIN=26695 / ATCC 700392;
STRAIN=26695 / ATCC 700392;
Tomb J.-F., White O. Kerlawsge A.R., Clayton R.A., Sutton G.G., Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S.R., Bloougherty B.A., Nelson K.B., Quackenbunsh J., Zhou L., Kirkness B.F., Peterson S.N., Loftus B.J., Richardson D.L., Dodson R.J., Khalak H.G., Glodek A., McKenney K., FitzGerald L.M., Lee N., Adams M.D., Hickey B.K., Berg D.B., Gocayne J.D., Utterback T.R., Peterson J.D., Kallin B., Hayes W.S., Pujii C., Bowman C., Watthey L., Wallin B., Hayes W.S., Borodovsky M., Karp P.D., Smith H.O., Fraser C.M., Venter J.C.;
                                             RMPLYYAYLHYKAMLVNDTTSPYKLK--ALYTLKKPSHKFKENHPNLCALIHNESDPWKR
                                                                    SQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHAH
                                                                                                                                       GFASFVASNPNAP1RNAFYDALNA1EPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCFEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           OrderedLocusNames=HP0651; ORFNames=HP 0651;
Helicobacter pylori (Campylobacter pylori).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "The complete genome sequence of the gastric pathogen Helicobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GO; GO:0016020; C:membrane; IEA.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:fucosyltransferase activity, transferring gl
GO; GO:0016486; P:protesin amino acid glycosylation; IEA
InterPro; IPR01503; Glyco_trans_10.
PANTHER; PTHR11929; Glyco_trans_10; I.Complete proteome; Glycosyltransferase; Transferase.
EQUENCE 476 AA; S5927 MW; 32BFFDBBD36E1F74 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   419 DHERLLSKATPLLELSQNTSFKIYRKAYQKSLPLLRAI 456
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TIGR; HP0651; -.
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                                                                                                                                                                 241 GYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNVFKSFVNVHDFNNFDEAIDYIRYLHAHQN 300
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Distributed under the Creative Commons Attribution-NoDerivs License
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                                             AYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRDLNEP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=99120557; PubMed=9923682; DOI=10.1038/16495; Alm R.A., Ling L.-S.L., Moir D.T., King B.L., Brown B.D., Doig P.C., Smith D.R., Noonan B.., Guild B.C., deJonge B.L., Carwel G., Tummino P.J., Caruso A., Wila-Nickelsen M., Mills D.M., Ives C., Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E., Vovis G.P.,
                                                                                                                                         GYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHAHQN
                                                                                                                                                                                                                                                                               301 AYLDMLYENPLNTIDGKAGFYQDLSPEKILDFFKNILENDTIYHCNDAHYSALHRDLNEP
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21-FBB-2006, entry version 23.
ALPHA (1,3)-PUCOSYLTRANSFERASE.
Mame-fuct; ORNames-jhp 0596;
Helicobacter pylori J99 (Campylobacter pylori J99).
Bacteria, Proteobacteria, Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
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"Genomic sequence comparison of two unrelated isolates of the human gastric pathogen Helicobacter pylori.";
Nature 397:176-180(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BioCyc; HPY185963:JHP0596-MONOMER; -. GO; GO:0016020; C:membrane; IRA. GO; GO:0016020; C:membrane; IRA. GO; GO:00160757; F:fuccosyltransferase activity; Iransferring glycosyl. GO; GO:0016486; P:protein amino acid glycosylation; IRA. InterPro; IPR001503; Glyco-trans.lo. PANTHER; PTHR11929; Glyco-trans.lo. Complete proteome; Glycosyltransferase.
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Q9zLI3;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=NCTC 11639; MbMed=9261149; DOI=10.1074/jbc.272.34.21357; MBDLINE=97407925; PubMed=9261149; DOI=10.1074/jbc.272.34.21357; GC Z., Chan N.W.C., Palcic M.M., Taylor D.B.; "Cloning and heterologous expression of an alphal,3-fucosyltransferase gene from the gaatric pathogen Helicobacter pylori."; J. Biol. Chem. 272:21357-21363(1997).
                                                                                                    HTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPFIF---YR
                                                                                         58 ILHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFND
                                                                                                                                                                                 WKRGFASFVASNPNAPIRNAFYDALNAIBPVASGGSVKNTLGYKVKNKNEFLSQYKFNLC
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                                             1 MFOPLLDAFIDSTHLDETTHK---PPLNVALANWWPLKNSEKKGFRDFILHFILKQRYKI
                                                         PENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYL
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                       Gaps
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eria; Epsilonproteobacteria; Campylobacterales;
                       24;
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco_trans 10.
PANTHER; PTHR11929; Glyco_trans 10; 1.
Glycosyltransferase; Transferase.
78.5%; Score 1929; DB 2; Length 476; 77.5%; Pred. No. 1.1e-118; ive 39; Mismatches 44; Indels 2
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01-JAN-1998, sequence version 1.
01-FEB-2006, entry version 26.
Alphal,3-fucosyltransferase.
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Helicobacteraceae, Helicobacter
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                       Conservative
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NUCLEOTIDE SEQUENCE.
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           Similarity
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030511;
           Best Local Simi
Matches 368;
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                                                                                                                                                        LHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDR 118
                                                                                                                                                                                                                                                 119 YLRMPLYYAYLHYKAMLVNDTTSPYKLK--ALYTLKKPSHKFKENHPNLCALIHNESDPW 176
                                                                                                                                                                                                                                                                           ENSOGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                             297 AHQNAYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRD 356
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Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                         1 MFQPLLDAYVBSASIEKMASKSPPPLKIAVANWW--GDEEIKEFKNSVLYFILSQRYTIT
                                                                                                                                                                                  1 MPQPLLDAFIDSTHLDETTHK--PPLNVALANWWPLKNSEKKGFRDFILHFILKQRYKII
                                                                                                                                                                                                                                                                                                                                          KRGFASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCF
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016775; F:tansferase activity, transferring glycosyl.
GO; GO:0016777; F:transferase activity, transferring glycosyl.
GO; GO:0016777; F:transferase activity, transferring glycosyl.
InterPro; IPR001503; Glyco trans 10.
FANTHER; PTHR11929; Glyco_trans 10.
FANTHER; PTHR11929; Glyco_trans 10.
Glycosyltransferase; Transferase.
SEQUENCE 432 AA; 50503 MW; 69D3A32FBD2F12C9 CRC64;
                     23;
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                       Indels
                         45;
  Pred. No. 6.5e-118;
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Pred. No. 1.3e-117;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  05-JUL-2004, integrated into UniProtKB/TrEMBL.
05-JUL-2004, sequence version 1.
05-EBB-2006, entry version 8.
Alpha-1,4 fucosyltransferase.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=DSM 6709;
PubMed=16000696; DOI=10.1093/glycob/cwj004;
                     41; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        432
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Helicobacteraceae; Helicobacter
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78.4%;
77.0%;
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                     Matches 365; Conservative
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STRAIN=DSM 6709;
  Best Local Similarity
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Best Local Similarity
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QEST35;
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4

Matches

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DB 2; Length 436;
                73.3%; Score 1801.5; DB 2
75.8%; Pred. No. 2.5e-110;
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PIR; C64567; C64567.
                                                         30; Mismatches
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                                      Best Local Similarity 75.88 Matches 350; Conservative
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025142 HELPY
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357 EPLVSI-------DDURINYDDLRINYDDLRINYDDLRINY-----390
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                                                                                                                        61 SNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDRYL 120
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GO; GO:0016020; C:membrane; IEA.

GO; GO:0008417; F:fucosyltransferase activity; IEA.

GO; GO:0016757; F:fucosyltransferase activity, transferring glycosyl. . .; IEA.

GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.

GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.

GO; GO:0016757; F:transferase activity, transferase.

FARTHER; PTHRIJE95; Glyco-trans 10.

PANTHER; PTHRIJE95; Glyco-trans 10; 1.

COMPLETE PROTECTION GLYCO-TRANSFERASE.

ECOUPLETE AS AS: 50699 MM; IDB2066AE98FAGIE CRC64;
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                                                                                                                                                                                                      GFASFVASNPNAPKRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKNEFLSQYKFNLCFEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUCLECTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
MEDLINE=99120557; PubMed=9921682; DOI=10.1038/16495;
Alm R.A., Ling L.-S.L., Moir D.T., King B.L., Brown E.D., Doig P.C.,
Smith D.R., Noonan B., Guild B.C., deJonge B.L., Carmel G.,
Tummino P.J., Caruso A., Viria-Nickelsen M., Mills D.M., Ives C.,
Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E., Vovis G.F.,
                                                             1 MFQPLLDAYIDSTRLDETDYKPPLKIAVANWW----GGVEEFKKSTLYFILSQRYITLH
                                                                                                                                               57 RNPDKPADIVPGNPLGSARKILSYQNAKRVPYTGENEVPNFNLFDYAIGFDELDFNDRYL
                                                                                                                                                                                                                                                                                      GFASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCFEN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       ONAYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRDLN
                                        1 MFQPLLDAFIDSTHLDETTHKPPLNVALANWWPLKNSEKKGFRDFILHFILKQRYKIILH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EPLVSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRRDHDDLRR
  Gaps
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Nature 397:176-180(1999).
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01-MAY-1999, sequence version 1.
21-FRB-2006, entry version 23.
ALPHA-(1,3)-FUCOSYLTRANSFERASE.
Mame-fucl, ORFNames-jhp 1002;
Helicobacter pylori 399 (Campylobacter pylori J99).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
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34;
  33; Indels
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  32; Mismatches
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    Conservative
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Q9ZKD7;
    359;
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RESULT **Q9ZKD7** 

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STRAIN=26655 / ATCC 700392;
STRAIN=2655 / ATCC 700392;
STRAIN=2733467; PubMed=9252185; DOI=10.1038/41483;
Tomb J.-F., White O., Kerlawage A.R., Clayton R.A., Sutton G.G., Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S.R., Bougherty B.A., Nelson K.E., Quackenbush J., Zhou L., Kirkness E.F., Dougherty B.A., Nelson K.E., Quackenbush J., Zhou L., Kirkness E.F., Gletson S.N., Loftus B.J., Richardson D.L., Dodgen R.J., Khalak H.G., Hickey R.K., Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D., Hickey B.Y., Cotton M.D., Weidlan J.F., Fujii C., Bowman C., Watthey L., Wallin E., Hayes W.S., Borodovsky M., Karp P.D., Smith H.O., Fraser C.M., Venter J.C.;
                                                                                                   1 MFQPLLDAFIESTPIKKKITFKSPPPPLKIAVANWW----GGAEBFKKSTLYFILSQRYT
                                                                                                                                                                                         57 IILHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFN
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                                                              1 MFQPLLDAFIDSTHL-DETTHK---PPLNVALANWWPLKNSEKKGFRDFILHFILKQRYK
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Gaps
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
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Indels
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                                                                                                                                                                                                                                                                                                                                            RYLRMPLYYAYLHYKAMLVNDTTSPYKLK--ALYTLKKPSHKFKENHPNLCALIHNESDP 175
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Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                         1 MFQPLLDAFIDSTHLDETTHK----PPLNVALANWPLKNSEKKGPRDFILHFILKQRYKI
                                                                                                                                                                                        1 MFQPLLDAFIESASIEKMASKSPPPPLKIAVANWW--GDEEIKEPKKSVLYFILSQRYAI
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
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STRAIN-NUTC 11637;
MEDLINE-97407924; PubMed-9261148; DOI=10.1074/jbc.272.34.21349;
MARTÍN S.L., Edbrooke M.R., Hodgman T.C., van den Eijnden D.H.,
Bird M.I.;
"Lewis X biosynthesis in Helicobacter pylori. Molecular cloning of
      GO: GO:0016020; C:membrane; IEA.
GO: GO:001617; F:fucosyltransferase activity; IEA.
GO: GO:001617; F:fucosyltransferase activity; IEA.
GO: GO:0016486; P:protein anino acid glycosylation; IEA.
Interpro; IPRO01503; Glyco-trans 10.
PANTHER; PITHI1929; Glyco-trans 10.
COMPLETE PITTISSE Glyco-trans 10;
COMPLETE PITTISSE Glyco-trans 10;
COMPLETE FOR Glycosyltransferase; Transferase.
SEQUENCE 425 AA; 49329 MW; 1182AF180D124A34 CRC64;
                                                                                                                                                 50;
                                                                                                                         Length 425;
                                                                                                              69.9%; Score 1718; DB 2; Leugum .-72.7%; Pred. No. 7.7e-105; Lindels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                416 LRRDHERLLSKATPLLELSQNTSFKIYRKAYQKSLPLLRAI 456
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JAN-1998, integrated into UniProtKB/TrEMBL
01-JAN-1998, sequence version 1.
07-FBB-2006, entry version 23.
Alpha-(1,3)-fucosyltransferase (EC 2.4.1.-).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alpha(1,3)-fucosyltransferase gene.";
J. Biol. Chem. 272:21349-21356(1997).
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                                                                                                                                     Best_Local Similarity 72.74
Matches 335; Conservative
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Best Local S
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|------DNLRINYDNLRVNYDDLRVNXDDLRVNYDDLRINYDDLRINYDDLRINYDDLRIN 290
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                61 PASFVASNANAPPENARNAFYDALNSIEPVTGGGAVKOTLGYKVGNKSEFLSQYKFNLCFENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        180 FASFVASNPNAPIRNAFYDALNAIBPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCFENS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NAYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRDLNE
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                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
EMBL; AF006039; AAB93985.1; -; Genomic_DNA.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:ransferase activity, transferring glycosyl.
GO; GO:0016486; P:protein amino acid glycosylation; IEA.
InterPro; IFPR0153; Glyco_trans10.
FANTHER; PTHR11929; Glyco_trans10.
Glycosyltransferase; Transferase.
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Bacteria; Bacteroidetes; Bacteroidetes (class); Bacteroidales;
Bacteroidaceae; Bacteroides.
                                                                                                                                                                                                                                                                                                                                             Length 333;
                                                                                                                                                                                                                                                                                                                                                                                                           24; Indels
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016740; F:transferase activity; IEA.
GO; GO:000686; P:protein amino acid glycosylation; IEA.
InterPro; IPR002105; Dockerin_1.
                                                                                                                                                                                                                                                                           333 AA; 39154 MW; CFFCB1AC127E0A8C CRC64;
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07-FEB-2006, entry version 6.
Putative LPS biosynthesis related glycosyltransferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      291 YERLLQNASPLLELSQNTSFKIYRKIYQKSLPLLRVI 327
                                                                                                                                                                                                                                                                                                                                             DB 2;
                                                                                                                                                                                                                                                                                                                                         59.1%; Score 1452; DB 2,
81.6%; Pred. No. 1.9e-87,
ative 26; Mismatches 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                420 HERLLSKATPLLELSQNTSFKIYRKAYQKSLPLLRAI
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QSL9S6;
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                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
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NUCLEOTIDE SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                      FNPKSFVNVHDFNNFDEAIDYIRYLHAHQNAYLDMLYENP----LNTIDGKAGFYQDLSF 326
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0016021; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. .; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. .; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. .; IEA.
GO; GO:0016757; F:transferase activity, transferase activity, panyTHER; PTRN11929; Glyco-trans 10.
PANYTHER; PTRN11929; Glyco-trans 10; 1.
COMplete protecome; Glycosyltransferase; Transferase.
SEQUENCE 359 AA; 42275 MM; BOIB3FBBBC82D463 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                    41 GFRDFILHFI----LKQRYKIILHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENE
                                                                                                                                                                                                                                                                                                      153 KPSHKFKENHPNLCALIHNESDPWKRGFASFVASNPN--APIRNAFYDALNAIEPVASGG
                                                                                                                                                                                                                                                                                                                                                                        211 SVKNTLGYKVKNKNEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKD
                                                                                                                                   Gaps
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MEDLINE=22709201; PubMed=12810954; DOI=10.1073/pnas.1332093100;
MEDLINE=2709201; PubMed=12810954; DOI=10.1073/pnas.1332093100;
Suerbaum S., Josenhans C., Sterzembach T., Drescher B., Brandt P.,
Bell M., Droege M., Partmann B., Fischer H.-P., Ge Z., Hoerster A.,
Holland R., Klein K., Koenig J., Macko L., Mandz G.L., Nyakatura G.,
Schauer D.B., Shen Z., Weber J., Frosch M., Fox J.G.,
"The complete genome sequence of the carcinogenic bacterium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Helicobacter hepaticus.
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
                                                                                                                                   71;
                                                                                               Query Match 18.7%; Score 460.5; DB 2; Length 331; Best Local Similarity 36.8%; Pred. No. 3.6e-22; Matches 120; Conservative 44; Mismatches 91; Indels 71.
InterPro; IPR001503; Glyco_trans_10.
PANTHER; PTHR11929; Glyco_trans_10; 1.
PROSITE; PS000448; CLOS_CELLULOSOME_RPT; UNKNOWN_1.
Complete proteome; Transferase.
SEQUENCE 331 AA; 39181 MW; 679FA409DF8CB864 CRC64;
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Proc. Natl. Acad. Sci. U.S.A. 100:7901-7906(2003).
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NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
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01-EBB-2006, entry version 12.
Alpha-1,3-fucosyltransferase.
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NCBI_TaxID=32025;
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Q7VFA1;
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                                                                                                                                                      8 THKPTKKVYFC----DGAVKG----KIVALLEQHYELIL---TNKDPDYIFYSCM--G
                                                                                                                                                                                                                                                                           S3 FEHLNY-NKVRIFATGENLRADFNFCDYAIGYDYIHFEDRYLRYPL---YLHCESDMQK-
                                                                                                                                                                                                                                                                                                                                                                                                     108 ------AMNKHLHITPETLQN------KSRPCTFVVSNGKADEIRTQFF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              258 IPIYWGSPSVA-----KDFNPKSFVNVHDFNNFDEAIDYIRYLHAHQNAYLDMLYENP
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Copeland A., Lucas S., Lapidus A., Barry K., Detter J.C., Glavina T.,
Hammon N., Israni S., Pitluck S., Brettin T., Bruce D., Han C.,
Tapia R., Gilna P., Kiss H., Schmutz J., Larimer F., Land M.,
Kyrpides N., Anderson I., Sanford R.A., Ritalahti K.M., Thomas H.S.,
Kirby J.R., Zhulin I.B., Loeffler F.B., Richardson P.;
"Complete sequence of Anacromyxobacter dehalogenans 2CP-C.";
Submitted (JAN-2006) to the EMBL/GenBank/DDBJ databases.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  139 TISPYKLKALYTLKKPSHKFKENHPNLCALIHNESDPWKRGFASFVASNPNA-PIRNAFY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               145 DPLSQYNRVDSGGRYKNNIGNPVVDKYAFLKEGKFNIAFENSSTNGYITEKLIQAFAAHT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       198 DALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
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                                                        64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   311 LNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRDLNE 359
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     264 V------FLDKNHQKIFD---EKLENFLLHIFNQPLEKAYRGFGQ 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14.1%; Score 345.5; DB 2; Length 287; 28.4%; Pred. No. 1.1e-14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-MAR-2006, sequence version 1.
07-MAR-2006, entry version 1.
Putative LPS biosynthesis related glycosyltransferase.
ORFManes-Adeh, 3056;
Anacromyxobacter dehalogenans 2CP-C.
Bacteria, Proteobacteria, Deltaproteobacteria; Myxococcales;
   Length 359,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    58; Mismatches 113; Indels
                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            287 AA; 34352 MW; 82CEAB6961E314A9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cystobacterineae; Myxococcaceae; Anaeromyxobacter
                                                     49; Mismatches 117;
17.8%; Score 437; DB 2; 34.1%; Pred. No. 1.4e-20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-MAR-2006, integrated into UniProtKB/TrEMBL
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                                  Pred. No.
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                            34.1%;
                                                           Matches 119; Conservative
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Best Local Similarity
Matches 85; Conserv
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PubMed=15875012; DOI=10.1038/nature03481;

Raichinger L., Pachebat J.A., GloceKner G., Rajandream M.A.,

Bichinger L., Pachebat J.A., GloceKner G., Szafranski K., Xu Q.,

Bucgang R., Berriman M., Song J., Olsen R., Szafranski K., Xu Q.,

Tunggal B., Kummerfeld S., Madera M., Konfortov B.A., Rivero P.,

Rankier A.T., Lehmann R., Hamlin N., Davies R., Gaudet P., Fey P.,

Pilcher K., Chen G., Saunders D., Sodergren B.J., Davis P.,

Rethornou A., Nie X., Hall N., Anjard C., Hemphill L., Bason N.,

Rethornou P., Desany B., Just E., Morio T., Rost R., Churcher C.M.,

Cooper J., Haydock S., van Driessche N., Cronin A., Goodhead I.,

Muzny D.M., Mourier T., Pain A., Iu M., Harper D., Lindsay R.,

Hauser H., James K.D., Quiles M., Madan Babu M., Saito T.,

Ruights A., Loulseged H., Mungall K.L., Oliver K., Price C.,

Knights A., Loulseged H., Hernandez J., Rabbinowitsch E., Steffen D.,

Knights M., Ma J., Kohara Y., Sharp S., Simmonds M.N., Spiegler S.,

Tivey A., Sugano S., White B., Walker D., Woodward J.R., Winckler T.,

Tanka Y., Shaulsky G., Schleicher M., Weinstock G.M., Rosenthal A.,

Cox B.C., Chisholm R.L., Gibbs R.A., Loomis W.F., Platzer M.,

Kay R.R., Williams J.G., Dear P.H., Noegel A.A., Barrell B.G.,
                                                                                                                                                          132 KAMLVNDTTSPYKLKALYTLKKPSHKFKENHPNLCALIHNESDPWKRGFASFVASNPNAP 191
                                    192 IRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCFENSQGYGYVTEKILD 251
                                                                                              252 AYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHAHQNAYLDMLYENPL 311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; AAFI01000108; EAL65179.1; -; Genomic_DNA.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0004417; F:fucosyltransferase activity; IEA.
GO; GO:000446; P:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco trans 10.
PANTHER; PTHR11929; Glyco trans 10.
Glycosyltransferase; Golgī stack; Hypothetical protein; Transferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAUTION: The sequence shown here is derived from an EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry which is
                                                                                                                                                                                                     312 NTIDGKAGPYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRDLNEP 360
                                                                                                                                                                                                                                   -----FSTPRRDARPP 283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "The genome of the social amoeba Dictyostelium discoideum."; Nature 435:43-57(2005).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             462 AA; 54815 MW; 444843FFBAEF6D77 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                       Dictyostelium discoideum (Slime mold).
Eukaryota, Mycetozoa, Dictyosteliida, Dictyostelium.
NCBI_TaxID=44689;
                                                                                                                                                                                                                                                                                                           Q54PJ9 DICDI PRELIMINARY; PRT; 462 AA. 054PJ9; 24-MY-2005, integrated into UniprotKB/TrEMBL 07-MAX-2006, entry version 1. 07-MAR-2006, entry version 5. Hypothetical protein.
                                                                                                                                                                                                                       preliminary data.
                                                                                                                                                                                                                                                                                                                                                                                                        ORFNames=DDB0186041;
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DB 2; Length 462;

8.9%; Score 218;

Query Match

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                                                                                                                                                                                                                          96 NEVPN-----FNLFDYAIGFDELDFNDRYLRM----PLYYAYLHYKAMLVNDTT-- 140
                                                                                                                                                                                                                                                                                                                                                    141 -SPYKLKALYTLKKPSHKFKENHPNLCALIHNESDPWKRGFASFVASNPNAPIRNAFYDA 199
                                                                                                                                                                                                                                                                                                                                                                                       232 QTQFKLE--YQVMKHNNTLQP------HQKSIPLANWFCTNCNSHSN---RNEYVQE 277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     250 LDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHAHONAYLDM-LYE 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Copyrighted by the Uniprot Consortium, see http://www.uniprot.org/terms
Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                             124 KGLDDKFYYIVRKPYY-----PNQKLDMEIWSDYIVDFEAPKKKLSSRNVPRTLISME
                                                                                                                                                                                                                                                                177 PQ-PNRTCEFDKDCFEFFNFKVSFB----SQSDIRMGFDTPSSSAYKLYNKLTIDEIAKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              200 INAIEPVAS-GGSVKNT-----LGYKVKNKNEFLSQYKFNLCFENSQGYGYVTEKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 278 LMKFIVVDSFGKCLKNMPTSNFLSRGSGDPFERKRLFITRYKFTIVFENSICKDYVSEKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                40 KGFRDFILHFILKQRYKIILHSNPNEPSDLVFGN----PLEQARKILSYQNTKRVFYTGE
                                         Gaps
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                                      78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      16;
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24.9%; Pred. No. 5e-55; vative 53; Mismatches 126; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=Rowbotham-Bradford;
PubMed=15486256; DOI=10.1126/science.1101485;
Raoult D., Audic S., Robert C., Abergel C., Renesto P.,
ILa Scola B., Susan M., Claverie J.-M.;
"The 1.2-megabase genome sequence of Mimivirus.";
Science 306:1344-1350(2004).
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0008486; P:fucosyltransferase activity; IEA.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco_trans_10.
PANTHER; PTHR11291; Glyco_trans_10;
Hypothetical protein.
EXQUENCE 600 AA; 70731 MW; 123F17F759IE9DD9 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        398 TNQTVIDOWKGVNNYPNKPGFRFREVQCPILRHYQRLKTGKİ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-DEC-2004, integrated into UniProtKB/TrEMBL.
07-DEC-2004, sequence version 1.
07-FEB-2006, entry version 8.
Hypothetical protein.
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QSUQ63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Science 299:2033-2033(2003).
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                                      85; Conservative
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ORFNames=MIMI_R654;
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rakeda Y.;
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                                                                                                                              SECUENCE
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Bichinger L., Pachebat J.A., Gloeckner G., Rajandream M.A.,

Bichinger L., Pachebat J.A., Gloeckner G., Rajandream M.A.,

Bichinger L., Pachebat J.A., Gloeckner G., Rajandreanski K., Xu Q.,

Sucgang R., Berrimann M., Song J., Olsen R., Szafranski K., Xu Q.,

Runggal B., Kummerfeld S., Madera M., Confortov B.A., Rivero F.,

Bankler A.T., Lehmann R., Hamlin N., Davies R., Gaudet P., Fey P.,

Pilcher K., Chen G., Saunders D., Sodergren E.J., Davis P.,

Rerhornou A., Nie X., Hall N., Anjard C., Hemphill L., Bason N.,

Rarbrother P., Desany B., Just E., Morio T., Rost R., Churcher C.M.,

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Buchrieser C., Wardroper A., Felder M., Thangavelu M., Johnson D.,

Rights A., Loulsaged H., Hernandez J., Rabbinowitsch E., Steffen D.,

Sanders M., Ma J., Kohara Y., Sharp S., Simmonds M.N., Spiegler S.,

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Cox B.C., Chisholm R.L., Gibbs R.A., Loomis W.F., Platzer M.,

Kaya R.R., Williams J.G., Dear P.H., Noegel A.A., Barrell B.G.,
                                                                                                                                                                                                                                                                                                     258
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                                                                                                                                                                   GEPTM-NITYFDMCI-----DTKYTSQSSITVYYPPIFSSMREHRKSLNHTDYI---- 420
                                                                                                                              GENEVPNFNLFDYAIGFDELDFNDRYL---RMPLYYAYL-----HYKAMLVNDTTSPYK 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                259 PIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHAHQNAYLDM----LYENPLNTI 314
                                                      319 NNDAKKYSWHLVEAVLKIFPNYKLV---GPTDNYDISINHLVEQ---FIFRPDSFNILIT 372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                145 LKALYTLKKPSHKFKENHPNLCALIHNESDPWKRGFASFVASNPNAPIRNAFYDALNAIE
                                                                                                                                                                                                                                                                                                                                                                                              205 PVASGGSVKNTLGYKVKNKN-----BFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NSEKKGFRDFILHFILK--QRYKIILHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                        456 KCCNNVDIKDSRSHFTEESTYNDIAIELYSEYKFVLALENIFWPGYSTEKLINPMIANSI
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-!- CAUTION: The sequence shown here is derived from an
EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry which is
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sukaryota; Mycetozoa; Dictyosteliida; Dictyostelium
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; P:fucosyltransferase activity;
GO; GO:0006486; P:protein amino acid qlycosylar
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24-MAY-2005, integrated into UniProtKB/TrEMBL
24-MAY-2005, sequence version 1.
V-MAX-2006, entry version 5.
Hypothetical protein fut1.
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Dictyostelium discoideum (Slime mold)
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GO:0016020; C:membrane; IEA.
GO:0008417; F:fucosyltransferase activity; IEA.
GO:0006486; P:protein amino acid glycosylation; IEA.

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Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "The genes responsible for O-antigen synthesis of Vibrio cholerae 0139 are closely related to those of Vibrio cholerae 022.";
                                                                                                                                                                                                                                                                        65 KPKCKIBIHSBPSNEKABSAQAIIYFFSQYQESSNKI--YNNTLKRYNPRQITIGWTMBS
                                                                                                                                                                                                                                                                                                                 ----YIGENE--VPNFNLFDYAIGFDEL-DFNDR-YLRMPLYYAYLHYKAMLVNDTTSP
                                                                                                                                                                                                                                                                                                                                             123 GGLYRFEGDSNFIISNFNI---TVGYPRVNDFNKQTHIYVP--YGPVEYSG-----SDS
                                                                                                                                                                                                                                                                                                                                                                                                      143 YKLKALYTLKK--PSHKFKENHPNLCALIHNESDPWKRGFASFVASNPNAPIRNAFYDAL
                                                                                                                                                                                                                                                                                                                                                                                                                               172 YAHSAKFDRIKEIPS---KRNN----SIVWISSNCWHEDYK-------RVYLAMSI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           201 NAIBPVASGGSVKNTLGY-----KVKNKNBFLSQYKFNLCFENSQGYGYVTEKILD
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MEDLINE=99453293; PubMed=10521656; DOI=10.1016/S0378-1119(99)00344-3;
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InterPro; IPR001503; Glyco trans 10.
PANTHER; PTHR11929; Glyco trans 10; 1.
Glycosyltransferase; Golgi stack; Hypothetical protein; Transferase;
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Vibrionaceae; Vibrio.
                                                                                                                                  Query Match 8.0%; Score 196.5; DB 2; Length Best Local Similarity 23.9%; Pred. No. 0.00011; Matches 80; Conservative 57; Mismatches 111; Indels
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GO; GO:0016020; C:membrane; IEA.

GO; GO:0008417; F:fucosyltransferase activity; IEA.

GO; GO:0006486; P:protein amino acid glycosylation; IEA.

InterPro; IFR01503; Glyco trans 10.

PANTHER; PTHR11929; Glyco trans 10; 1.

SEQUENCE 346 AA; 40359 MW; 28690BC3FEFFDA7F CRC64;
                                                                                           389 AA; 45383 MW; 9EA7D88C3D423F99 CRC64;
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07-FEB-2006, entry version 22.
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64 NEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELD 114	115 FNDRYLRMPLYYAYLHYKAMLVNDTTSPYKLKALYTLK 152 	153 KPSHKFKENHPNLCALÌHNESDPWKRGPASFVASNPNAPIRNAFYDALNAIEPVASGGSV 212 	213 KNTLGYKVKNKNBFLSQYKFNLCFENSQGY-GYVTEKILDAYFSHTIPIYWGS 264 :	265 PSVAKDFNPK-SFVNVHDFNNFDEAIDYIRYLHAHQNAYLDMLYENPLNTI 314 :	YQ 322       YQ 335	
NEPSDLVI 	FNDRYLRA : ::: DGVKYIKI	KPSHKFKG    :: KAIRWFER	KNTLG      QKILGRSY	PSVAKDF1 :     NNVT-DF1	315 DGKA-GFYQ 322 	
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/EMC_Celerra_SIDS3/ptodata/2/iaa/7_COMB.pep:*
/EMC_Celerra_SIDS3/ptodata/2/iaa/H_COMB.pep:*
/EMC_Celerra_SIDS3/ptodata/2/iaa/PCTUS_COMB.pep:*
/EMC_Celerra_SIDS3/ptodata/2/iaa/RE_COMB.pep:*
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US-09-092-97A-7

US-09-092-918A-7

US-10-189-977A-7

US-10-189-977A-7

US-10-189-977A-7

US-10-189-977A-2

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US-10-189-977A-8

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Sequence 1, Application US/09092315;
Patent No. 6399337;
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.;
APPLICANT: Taylor, Diane E.;
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE;
TITLE REPRENCE: 07254/049011;
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1998-06-05
EARLIER FILING DATE: 1997-06-06;
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FRALES FALSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                         ; ORGANISM: Helicobacter pylori
US-09-092-315-1
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Matches 365; Conservative
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US-10-189-977A-1
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TITLE OF INVENTION: PUCCSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT PAPLICATION NUMBER: US 09/092,315
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-06
NUMBER OF SEQ ID NOS: 27
SOSTWARE: FASELSEQ for Windows Version 4.0
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LNEPLVSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRRDHDDL 416
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Best Local Similarity 79.3%; Pred. No. 4.9e-180;
Matches 365; Conservative 41; Mismatches 45;
                                                                                                                                                                                     Sequence 1, Application US/09733524A Patent No. 6534298 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
ORGANISM: Helicobacter pylori
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RESULT 3 US-10-189-977A-1

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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, C. Longming
TITLE OF INVENTION: PUCCSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/733,524
PRIOR APPLICATION NUMBER: US/09/733,524
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR PILING DATE: 1998-06-05
PRIOR PLING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FEALSEQ'FOR Windows Version 4.0
SEQ ID NOS: 27
SEQ ID NOS: 27
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78.7%; Score 1934.5; DB 2
Best Local Similarity 79.3%; Pred. No. 4.9e-180;
Matches 365; Conservative 41; Mismatches 45;
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Patent No. 7029891
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Ge, Zhongming
APPLICANT: Ge, Zhongming
APPLICANT: University of Alberta
TITLE OF INVENTION: Alpha-1,3 Pucosyltransferase
FILE REFERENCE: 017398-000420US
CURRENT APPLICATION NUMBER: US/10/392,098A
Sequence 1, Application US/10189977A Patent No. 6962806 GENERAL INFORMATION:
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LENGTH: 476
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                                                                                                                                                                                                                                                                                                                           Length 464;
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; OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
US-10-392-098A-1
                                                                                                                                                                                                                                                                                                                      Query Match 78.7%; Score 1934.5; DB 3; Length Best Local Similarity 79.3%; Pred. No. 4.9e-180; Matches 365; Conservative 41; Mismatches 45; Indels
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APPLICANT: Taylor, Diane B.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALFHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1998-06-05
EARLIER APPLICATION NUMBER: US 60/048,857
EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
        PRIOR PLINA DATE: US 10/10/130, 319
PRIOR PLINA DATE: 2002-04-09
PRIOR PLINA DATE: 2002-04-09
PRIOR PLINA DATE: 1997-06-06
PRIOR PLINA DATE: 1997-06-06
PRIOR PLINA DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR PLINA DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SOFTWARE: PATENT VET. 2.1
LENGTH: 464
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; Sequence 5, Application US/09092315
; Patent No. 6399337
2003-03-17
                                                                                                                                                                                                           TYPE: PRT
ORGANISM: Helicobacter pylori
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GENERAL INFORMATION:
APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSION EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: UNMERR: US/09/733,524A
CURRENT APPLICATION NUMBER: US 09/092,315
FRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1997-06-06
PRIOR FILING DATE: 1997-06-06
SOFTWARR: FREEESC for Windows Version 4.0
SOFTWARR: FREEESC for Windows Version 4.0
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356 DLHEPLISIDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDD
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                                                                                                  Score 1929; DB 2;
Pred. No. 1.8e-179;
                                                                                                                                             39; Mismatches
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; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-09-092-315-5
                                                                                                Query Match
Best Local Similarity 77.5%;
Matches 368; Conservative 3:
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Matches 368; Conservative
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176 WKRGFASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLC
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Patent No. 7029891
GENERAL INFORMATION:
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ORGANISM: Helicobacter pylori
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Matches 368; Conservative
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Sequence 5, Application US/10189977A

Patent No. 6962806

GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/10/189,977A
CURRENT APPLICATION NUMBER: US/09/733,524
PRIOR APPLICATION NUMBER: US/09/733,524
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR PLIING DATE: 1998-06-05
PRIOR FILING DATE: 1999-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
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                                                RYLRMPLYYAYLHYKAMLVNDTTSPYKLK--ALYTLKKPSHKFKENHPNLCALIHNESDP
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1 MFQPLLDAFIESASIEKMVSKSPPPPLKIAVANWW--GDEEIKEFKKSVLYFILSQRYAI
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ORGANISM: Helicobacter pylori
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FENSOGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYL
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OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
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APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: University of Alberta
APPLICANT: University of Alberta
TITLE OF INVENTION: Alpha-1,3 Fucosyltransferase
FILE REFERENCE: 017398-00042005
CURRENT APPLICATION NUMBER: US/10/392,098A
CURRENT APPLICATION NUMBER: US/10/120,319
PRIOR APPLICATION NUMBER: US/00/120,319
PRIOR FILING DATE: 1997-06-06
PRIOR PILING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SEQ ID NOS 5
LENGTH: 476
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US-09-733-524A-7
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                                                               HAHQNAYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHR 355
                                                                                HTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPFIF---YR 355
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                  KRGFASFVASNDNAPIRNAFYDALNAI EPVASGGSVKOYTLGYKVKOKORFILSQYKFNLCF
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Sequence 7, Application US/09092315
Patent No. 6399337
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: G. Zhongming
TITLE OF INVENTION: ALFHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT FILING DATE: 1998-06-05
EARLIER APPLICATION NUMBER: US 60/048,857
EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
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US-09-092-315-7
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Best Local Similarity 77.2%;
Matches 366; Conservative
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US-09-092-315-7
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APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EVERESSING THEM (amended)
TITLE OF INVENTION: EVERESSING THEM (amended)
FILE REFERENCE: 07254-049902
CURRENT APPLICATION NUMBER: US/09/733,524A
CURRENT FILING DATE: 2000-12-07
FRIOR APPLICATION NUMBER: US 69/092,315
FRIOR APPLICATION NUMBER: US 60/048,857
FRIOR PILING DATE: 1998-06-05
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FASESEQ for Windows Version 4.0
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Patent No. 6962806
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: PUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
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Sequence 7, Application US/09733524A Patent No. 6534298 GENERAL INFORMATION:
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US-09-733-524A-7
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Query Match
Best Local Similarity
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                                                                           LENGTH: 478
TYPE: PRT
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|INEPLYTIDDLRVNYDDLRVNYDDLRINYDDLRVNYDDLRINYDDLRVNYDDLRVNYDDL
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Fatent No. 7029891
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: Alpha-1, 3 Pucosyltransferases
TITLE NO INVENTION: Alpha-1, 3 Pucosyltransferases
FILE REPRENCE: 017398-00042008
CURRENT PILING DATE: 2003-03-17
FRIOR APPLICATION NUMBER: US/10/120,319
FRIOR FILING DATE: 2002-04-09
FRIOR FILING DATE: 1997-06-06
FRIOR FILING DATE: 1997-06-06
FRIOR FILING DATE: 1998-06-05
                                                                                                                                                                                                                                                                                    Query Match 78.0%; Score 1917.5; DB 2 Best Local Similarity 77.0%; Pred. No. 2.3e-178; Matches 365; Conservative 41; Mismatches 45;
EXPRESSING THEM (amended)
         CURRENT APPLICATION NUMBER: US/10/189,977A
CURRENT APPLICATION NUMBER: US/10/189,977A
CURRENT PILING DATE: 2002-03-07
PRIOR APPLICATION NUMBER: US/09/733,524
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FREESEQ for Windows Version 4.0
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TITLE OF INVENTION:
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LENGTH: 478
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Pred. No. 6.6e-176;
                                                                                                                                                                                                                                                                                                                                                   Length 478;
                                                                                                                                                                                                                                            OTHER INFORMATION: H. pylori strain NCTC11639 (763)
OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
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Patent No. 639937
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
TILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1998-06-05
BARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE PATENCATION NUMBER: US 60/048,857
SALIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastsEQ for Windows Version 3.0
PRIOR APPLICATION NUMBER: US 09/733,524
PRIOR FILING DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 7
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US-09-092-315-2
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge_Zhongming
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
CURRENT APPLICATION NUMBER: US/10/189,977A
CURRENT FILING DATE: 2002-13-07
PRIOR FILING DATE: 2000-12-07
PRIOR FILING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR FILING DATE: 1997-06-06
PRIOR PRILING DATE: 1997-06-06
SEQ ID NOS: 27
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Matches 361; Conservative
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Patent No. 6534298

GENERAL INPOMENTION

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Ge, Zhongming

TITLE OF INVENTION: WIGHER ACIDS ENCODING ALPHA-1, 3

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REPERENCE: 07254-049002

CURRENT APPLICATION NUMBER: US 09/092,315

PRIOR APPLICATION NUMBER: US 09/092,315

PRIOR PLILNG DATE: 1998-06-05

PRIOR PLILNG DATE: 1998-06-05

PRIOR PLILNG DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 27

SCPTWARE: PastSEQ for Windows Version 4.0

SCPTWARE: PastSEQ for Windows Version 4.0
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      41; Mismatches
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ORGANISM: Helicobacter pylori
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 2458; DB 5; Length 456; 100.0%; Pred. No. 2.2e-195; Arive 0; Mismatches 0; Indels 0
                                                                                                                                                                                                                                                                                                                                                            Sequence 20, Application US/10764212
| Publication No. US20050164338A1
| GENERAL INFORMATION:
| APPLICANT: Simala-Grant, Joanne
| APPLICANT: Simala-Grant, Joanne
| APPLICANT: Taylor, Diane
| APPLICANT: Bezila, Daniel James
| APPLICANT: Neose Technologies, Inc. | APPLICANT: Governors of the University of Alberta | TILLE OF INVENTION: H. Pylori Fucosyltransferases | FILE REFERENCE: 0.19957-019400US | CURRENT APPLICATION NUMBER: US/10/764,212 | CURRENT FILING DATE: 2004-01-22 | NUMBER OF SEQ ID NOS: 81 | SOFTWARE: PatentIn Ver. 2.1
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Matches 456; Conservative
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.: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US10A_PUBCOMB.pep:*
.: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US10B_PUBCOMB.pep:*
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1 MFQPLLDAFIDSTHLDETTH.....TSFKIYRKAYQKSLPLLRAI
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GenCore version 5.1.9
(c) 1993 - 2006 Biocceleration Ltd.
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US-10-130-319-12

US-10-130-977-1

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US-10-130-977-5

US-10-130-977-5

US-10-130-977-7

US-10-130-977-7

US-10-130-977-7

US-10-130-977-7

US-10-130-98-7

US-10-33-524-17

US-10-764-212-6

US-10-130-977-8

US-10-130-977-8

US-10-130-977-8

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US-10-130-977-8

US-10-120-319-8

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US-10-120-319-8

US-10-120-319-8

US-10-130-977-8

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                                                                                                                                                                                                                                                           2097797 segs, 463214858 residues
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Maximum Match 100%
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                                                          - protein search, using sw model
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length: 2000000000
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US-10-120-319-3
US-10-189-977-3
US-10-392-908-3
US-10-764-212-18
US-10-189-977-6
US-10-189-977-6
US-10-189-977-6
US-10-764-212-12
US-10-764-212-6
US-10-764-212-6
US-10-764-212-6
US-10-764-212-6
US-10-120-319-13
US-10-120-319-13
US-10-764-212-8
US-10-764-212-8
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US-10-764-212-8
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Sequence 1, Application US/10189977
PUblication No. US20030166211A1
GENERAL INFORMATION
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
ITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/10/189,977
CURRENT PILING DATE: 1998-06-05
FRIOR PILING DATE: 1998-06-05
FRIOR APPLICATION NUMBER: US 60/048,857
FRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 1, Application US/10392098
Publication No. US20030166212A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                              TYPE: PRT
ORGANISM: Helicobacter pylori
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-10-392-098-1
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                                                                     361 LVSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRRDHDDLRRDH 420
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Publication No. US20020164749A1
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
TILLE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT FILING DATE: 2002-04-09
PRIOR PELING DATE: BARLIER PILING DATE: 1999-06-05
PRIOR FILING DATE: BARLIER FILING DATE: 1999-06-05
PRIOR FILING DATE: BARLIER FILING DATE: 1999-06-06
WINDER: CONTROL OF THE PRIOR FILING DATE: 1999-06-06
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                                                                                                                   ERLLSKATPLLELSONTSPKIYRKAYOKSLPLIRAI 456
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; Pred. No. 6.7e-152;
41; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
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Best Local Similarity 79.3%;
Matches 365; Conservative 4
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LENGTH: 464
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: FUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/10/392,098
CURRENT FILING DATE: 2003-03-17
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                                                                                             1 MFQPLLDAFIDSTHLDETTHK -- PPLNVALANWWPLKNSEKKGFRDFILHFILKQRYKII
                                                                                                                        59 LHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDR
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    DB 4; Length 464;
                                                 45; Indels
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Query Match 78.7%; Score 1934.5; DB 4, Best Local Similarity 79.3%; Pred. No. 6.7e-152; Matches 365; Conservative 41; Mismatches 45;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CURRENT FILING DATE: 2003-03-17
PRIOR APPLICATION NUMBER: US/09/733,524A
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ORGANISM: Helicobacter pylori fucosyltransferase
                                                                                           ; OTHER INFURM
US-09-733-524-15
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Sequence 15, Application US/09733524

Patent No. US20020068347A1

GENERAL INFORMATION:

APPLICANT: The Governers of the University of Alberta, a Canada Corporation

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: WUGLER: US/09/733,524

CURRENT APPLICATION NUMBER: US/09/315

PRIOR APPLICATION NUMBER: 09/092,315

PRIOR APPLICATION NUMBER: 09/092,315

PRIOR PRILING DATE: 1998-06-05

PRIOR PILING DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 20

SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                           59 LHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDR 118
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78.7%; Score 1934.5; DB 4; Length 464;
Best Local Similarity 79.3%; Pred. No. 6.7e-152;
Matches 365; Conservative 41; Mismatches 45; Indels 9;
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PRIOR FILING DATE: 2000-12-07
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR FILING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SEQ ID NO 1
                                                                                                                                                                                      TYPE: PRT
ORGANISM: Helicobacter pylori
                                                                                                                                                                       464
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LENGTH: 476
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APPLICANT: Taylor, Diane E.
APPLICANT: G. Zhongming
TITLE OF INVERTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/04901
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT FILING DATE: 2002-04-09
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/092,315
PRIOR PILING DATE: BARLIER FILING DATE: 1998-06-05
PRIOR FILING DATE: EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
NUMBER OF SEQ ID NOS: 22
SEQ ID NO 5.
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                                                                                                                  78.5%; Score 1929; DB 3; Length 476; 77.5%; Pred. No. 2e-151;
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Publication No. US20020164749A1
GENERAL INFORMATION:
NAME/KEY: PEPTIDE
LOCATION: (0)...(0)
OTHER INFORMATION: Strain 26695A
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Matches 368; Conservative
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Matches 368; Conservative
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, ORGANISM: Helicobacter pylori
US-10-392-098-5
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                               58 ILHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFND
                                                                                           RYLRMPLYYAYLHYKAMLVNDTTSPYKLK--ALYTLKKPSHKFKENHPNLCALIHNESDP
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1 MFQPLLDAFIESASIEKMVSKSPPPPLKIAVANWW--GDEEIKEFKKSVLYFILSQRYAI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 5, Application US/10189977
; Publication No. US20030166211A1
; GENERAL INFORMATION:
; APPLICANT: Taylor, Diane E.;
APPLICANT: Taylor, Diane E.;
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE;
FILLE REFERENCE: 07254/049010;
CURRENT APPLICATION NUMBER: US/10/189,977
; CURRENT FILING DATE: 2002-07-03
; PRIOR PILING DATE: 1998-06-05
; PRIOR FILING DATE: 1998-06-05
; PRIOR FILING DATE: 1999-06-05
; RIOR PILING DATE: 1999-06-05
; ROFTWARE: FRACES FOR INOS: 22
; SOFTWARE: FRACES FOR INOS: 22
; SOFTWARE: FRACESQ for Windows Version 3.0
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; ORGANISM: Helicobacter pylori
US-10-189-977-5
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JOHNSTAIL TRYLORY DIANNE B.

JAPPLICANT: TAYLOR, DIANNE B.

APPLICANT: TAYLOR, DIANNE B.

APPLICANT: Ge, Zhongming

TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REPRENCE: 0725-4-049002

CURRENT PILING DATE: 2003-03-3-7

PRIOR PILING DATE: 2000-12-07

PRIOR PILING DATE: 1998-06-05

PRIOR PILING DATE: 1999-06-05

PRIOR APPLICATION NUMBER: US 60/048,857

PRIOR APPLICATION NUMBER: US 60/048,857

PRIOR PILING DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 27

SOFTWARE: PASESEQ for Windows Version 4.0

SEQ ID NO 5.
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FENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYL
                             239 FENSQGYGYYTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIKYL
                                                                                                        HAHONAYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHR
                                                                                                                                        HTHPNAYLDMLYENPLNTLDGKAYPYQDLSFKKILDFFKTILENDTIYHNNPFIF---YR
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SENERAL INFORMATION:
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356 DLNEPLVSV-------DDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDD 401
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LNEPLVIIDDLRVNYDDLRVNYDDLRINYDDLRVNYDDLRINYDDLRVNYDDLRVNYDDL 415
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Sequence 7, Application US/2020164749A1
Senblication No. US20020164749A1
SERBRAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: Libra-L, 3-PUCOSYLTRANFERASE
FILE REFERENCE: 07254/04901
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT PILIG DATE: EARLIER FILING DATE: 1998-06-05
PRIOR PILING DATE: EARLIER FILING DATE: 1998-06-05
PRIOR FILING DATE: EARLIER FILING DATE: 1998-06-05
PRIOR FILING DATE: EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ 1D NOS: 22
NUMBER OF SEQ 1D NOS: 22
SOFTWARE: FASTSEQ for Windows Version 3.0
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ORGANISM: Helicobacter pylori
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Best Local Similarity
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LENGTH: 478
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; Sequence 7, Application US/10189977; Publication No. US20030166211A1

RESULT 10 US-10-189-977-7

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APPLICANT: The Governers of the University of Alberta, a Canada Corporation APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM
TITLE OF INVENTION: EXPRESSING THEM
FILE REFERENCE: 07254/049002
CURRENT APPLICATION NUMBER: US/09/733,524
CURRENT FILING DATE: 2000-12-14
PRIOR APPLICATION NUMBER: 09/092,315
PRIOR PLING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: 60/048,857
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356 INBPLYTIDDLRVNYDDLRVNYDDLRINYDDLRVNYDDLRINYDDLRVNYDDLRVNYDDL
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APPLICANT: Taylor, Diane E.

APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REPERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/10/189,977
CURRENT FILING DATE: 1090-005.
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1997-06-06
PRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 7
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Patent No. US20020068347A1
GENERAL INFORMATION:
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US-10-189-977-7
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Query Match 78.0
Best Local Similarity 77.0
Matches 365; Conservative
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EVCOSTLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REPRENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/139,2098
CURRENT PILING DATE: 2003-03-17
PRIOR APPLICATION NUMBER: US/09/733,524A
PRIOR PLING DATE: 2000-12-07
PRIOR PPLING DATE: 1999-06-05
PRIOR PPLING DATE: 1999-06-05
PRIOR PILING DATE: 1999-06-06
NUMBER OF SEQ ID NOS: 27
SOFTHARE: PSELSEQ for Windows Version 4.0
SEQ ID NO 7
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                                                                                                                                      Length 501;
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                                                                                           ORGANISM: Helicobacter pylori fucosyltransferase
                                                                                                                                     78.2%; Score 1921.5; DB 79.1%; Pred. No. 9e-151; iive 41; Mismatches 4
PRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 20
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 1
LENGTH: 501
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Publication No. US20030166212A1
GENERAL INFORMATION:
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, ORGANISM: Helicobacter pylori
US-10-392-098-7
                                                                                                                                                                    Conservative
                                                                                                                                                    Best_Local Similarity
Matches 364; Conserv
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                                                                                                          US-09-733-524-1
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                                                                                   1 MFQPLLDAFIDSTHLDETTHK--PPLNVALANWWPLKNSEKKGFRDFILHFILKQRYKII
                                           Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 8559, Application US/10335977
Publication No. US20040052799A1
GENERAL INFORMATION:
APPLICANT: DOUGLAS SMITH et al
APPLICANT: DOUGLAS SMITH et al
TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES
RELATING TO HELICOBACTER PYLORI FOR
DIAGNOSTICS AND THERAPEUTICS
78.0%; Score 1917.5; DB 4; Length 478; 77.0%; Pred. No. 1.8e-150;
                                         Indels
                                              45;
                                         41; Mismatches
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APPLICATION NUMBER: US/10/335,977
FILING DATE: 30-Dec-2002
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE: LAHIVE & COCKFIELD STREET: 28 State Street
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER: IBM PC Compatible OPERATING SYSTEM: Windows NT SOFTWARE: UNIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 02109-1875
COMPUTER READABLE FORM:
MEDIUM TYPE: CD/ROM ISO9660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
NAME: Mandragouras, Amy E.
REGISTRATION NUMBER: 36,207
REFERENCE/DOCKET NUMBER: GTT
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (617) 227-7400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (617)742-421
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 10031
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CITY: Boston
STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CORRESPONDENCE ADDRESS
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GENERAL INFORMATION:
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                                     FEATURE:
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Batent No. US20020068347A1

GENERAL INFORMATION:

APPLICANT: The Governers of the University of Alberta, a Canada Corporation

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: WINGER: US/09/733,524

CURRENT APPLICATION NUMBER: US/09/733,524

CURRENT APPLICATION NUMBER: 09/092,315

PRIOR APPLICATION NUMBER: 09/092,315

PRIOR APPLICATION NUMBER: 60/048,857

PRIOR PLING DATE: 1998-06-06

PRIOR FILING DATE: 1998-06-06

NUMBER OF SEQ ID NOS: 20

SOFTWARE: FastSEQ for Windows Version 4.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 QNPNEPSDLVFGSPIGSARKILSYQNTKRVPYTGENEVPNFNLFDYAIGFDELDFRDRYL 120
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                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                    33;
                                                                                                                                                                                                                                                                               DB 4; Length 436;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 77.6%; Score 1908.5; DB 4; Length Best Local Similarity 79.3%; Pred. No. 8.9e-150; Matches 363; Conservative 26; Mismatches 36; Indels
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                                                                                                                                                                        NAME/KEY: misc feature
LOCATION: (B) LOCATION 1...436
SEQUENCE DESCRIPTION: SEQ ID NO: 8559:
                LENGTH: 436 amino acids
TYPE: amino acid
TOPOLOGY: linear
MOLECULE TYPE: protein
HYPOTHETICAL: YE
ORIGINAL SOURCE:
ORIGINAL SOURCE:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                        US-10-335-977-8559
                                                                                                                                                          FEATURE
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LENGTH: 479
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356 densplytiddlrvnyddlrvnyddlrinyddlrinyddlrinyddlrvnydd
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US-10-764-212-6
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                                                                                                                                                                          Length 479;
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                                                                                                                                                                                                                      Indels
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APPLICANT: Taylor, Diane
APPLICANT: Taylor, Diane
APPLICANT: Taylor, Diane
APPLICANT: Bezila, Daniel James
APPLICANT: Neose Technologies, Inc.
APPLICANT: Governors of the University of Alberta
TITLE OP INVENTION: H. Pylori Pucceyltransferases
FILE REFERENCE: 019957-019400US
CURRENT PAPLICATION NUMBER: US/10/764,212
CURRENT FILING DATE: 2004-01-22
NUMBER OF SEQ ID NOS: 81
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 6
LENGTH: 485
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                                                                                                                                                                   77.2%; Score 1897; DB 3; 76.4%; Pred. No. 9.2e-149; tive 42; Mismatches 46;
ORGANISM: Helicobacter pylori fucosyltransferase
                                   ; NAME/KTY: PEPTIDB; LOCATION: (0)...(0); OTHER INFORMATION: Strain 763 from NCTC11639 US-09-733-524-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 6, Application US/10764212
Publication No. US20050164338A1
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                                                                                                                                                                   Query Match
Best Local Similarity 76.49
Matches 363; Conservative
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MPOPLLDAFIDSTHLDETTHKPPLNVALANWWPLKNSEKKGFRDFILHPILKORYKII 58 	LHSNPNEPSDIVFGNPLEQAEKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDFNDR 118 	YLRWPLYYAYLHYKAMLVNDTTSPYKLKALYTLKKBSHKFKENHPNLCALIHNESDPW 176 	KRGFASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCF 236 	ENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 296 	AHQNAYLDMLYENPLATIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRD 356 	INBELVSVDDLRRDHDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNY 406 	DDLRRDHDDLRRDHERLISKATPLILELSQNTSFKIYRKAYQKSLFLLRA 455 
1 MFC	29 EH 29 EH 29 EH	119 YLE	177 KRC     179 KRC	237 ENS 	297 AH(    -   299 THI	357 LNI 	407
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Search completed: August 11, 2006, 19:53:03 Job time: 113.112 secs

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August 11, 2006, 19:47:49; Search time 17.3294 Seconds (without alignments) 1771.230 Million cell updates/sec
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1: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US09_NEW_PUB.pep:*
2: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
3: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
4: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
5: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
6: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
7: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
8: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US11_NEW_PUB.pep:*
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2458
1 MPQPLLDARIDSTHLDETTH......TSFKIYRKAYQKSLPLLRAI 456
GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      239914 seqs, 67312017 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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Perfect score:
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Database

Sequence:

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Description	Sequence 284, App	5129,	5128,	5127,	52598,			Sequence 24, Appl	10,	21,	6	Sequence 27, Appl	263		Sequence 4624, Ap	4, App	20		Sequence 922, App	12, 7	Sequence 2, Appli	43	Sequence 3, Appli	Sequence 34473, A	Sequence 11955, A
QI	US-11-197-712-284	US-10-953-349-5129	US-10-953-349-5128	US-10-953-349-5127	US-10-449-902-52598	US-11-293-697-4748	US-10-449-902-44967	US-10-537-642-24	US-10-537-642-10	US-10-537-642-21	US-10-537-642-9	US-10-537-642-27	US-10-471-571A-2632	US-10-471-571A-5504	US-10-471-571A-4624	US-10-126-915-4	US-10-471-571A-5608	US-10-537-642-19	US-10-471-571A-922	US-11-294-155-12	US-10-392-874A-2	US-10-449-902-43388	US-10-537-642-3	US-10-953-349-34473	US-11-056-355B-11955
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% Query Match	6.1	6.0	6.0	0.9	5.6	5.3	5.3	5.0	4.9	4.7	4.7	4.5	4.5	4.5	4.5	4.4	4.2	4.2	4.1	4.1	4.0	4.0	4.0	3.9	3.9
Score	149	147.5	147.5	147.5	138	131	129.5	123.5	119.5	116.5	116.5	111.5	111.5	111	110.5	108	102.5	102.5	102	101.5	97.5	97.5	97.5	97	97
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34472, A	11954, A	23, Appl	8, Appli	9, Appli	15, Appl	80733, A	80732, A	80731, A	3528, Ap	3, Appli	98565, A	109804,	98564, A	109803,	98563, A	109802,	18453, A	6, Appli	5, Appli
Sequence 34472,	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence	Sequence
US-10-953-349-34472	US-11-056-355B-11954	US-10-537-642-23	US-10-530-234-8	US-11-257-500-9	US-11-257-500-15	US-11-056-355B-80733	US-11-056-355B-80732	US-11-056-355B-80731	US-10-471-571A-3528	US-10-126-915-3	US-11-056-355B-98565	US-11-056-355B-109804	US-11-056-355B-98564	US-11-056-355B-109803	US-11-056-355B-98563	US-11-056-355B-109802	US-11-330-403-18453	US-10-537-642-6	US-10-537-642-5
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97	97	97	96	95.5	95.5	95	95	95	94.5	94	94	94	94	94	94	94	93.5	93.5	93
26	27	28	53	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

## ALIGNMENTS

US-11-197-712-284  Sequence 284, Appli Sequence 284, Appli Dublication No. US2 GENERAL INFORMATION APPLICANT: Bougue APPLICANT: Bougue APPLICANT: Bougue APPLICANT: Bougue APPLICANT: Bougue CURRENT APPLICATION CURRENT APPLICATION PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR APPLICATION PRIOR APPLICATION PRIOR APPLICATION PRIOR APPLICATION PRIOR APPLICATION PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE: PRIOR PILING DATE	Sequence 244, Application US/11197112
Db 27	.:   ::    .:   278 TYIEVDSYGECLRNKDLPQQLKNPASMDADGFYRIIAQYKFILAFENAVCDDYITEKFWR 337
Qy 25	252 AYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHAHQNAYLDMLYE 308

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APPLICANT: ALEXANDROV, Nickolai et al.
TITLE OF INVENTION: ENCORDED THERBY
TITLE OF INVENTION: ENCORDED THERBY
FILE REFERENCE: 2750-1579PUS2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: Patentin version 3.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        237 ENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNP--KSFVNVHDFNNFDEAIDYIRY 294
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Publication No. US20060123505A1

GENERAL INFORMATION:

APPLICANT: National Institute of Agrobiological Sciences.

APPLICANT: Bio-oriented Technology Research Advancement Institution.

APPLICANT: The Institute of Physical and Chemical Research.

APPLICANT: Foundation for Advancement of International Science.

TITLE OF INVENTION: FOLL-LENGTH PLANT CDNA AND USES THEREOF

FILE REFERENCE: MOA-A020571-US

CURRENT APPLICATION NUMBER: US/10/449,902

CURRENT PILING DATE: 2003-05-29

PRIOR FILING DATE: 2003-05-39

PRIOR FILING DATE: 2002-05-30

PRIOR FILING DATE: 2002-12-11

NUMBER OF SEQ ID NOS: 56791

SOFTWARE: PatentIn Ver. 2.1

LENGTH: 513
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  -SFKALVD 177
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30; Mismatches
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                                                                                                                  ; Sequence 5127, Application US/10953349; Publication No. US20060107345A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                           , ORGANISM: Arabidopsis thaliana
US-10-953-349-5127
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US-10-449-902-52598
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Best Local Similarity
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Publication No. US20060107345A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: ALEXANDROW, Nickolai et al.
TITLE OF INVENTION: ENCONDED THERRY
FILE REFERENCE: 2750-1579PUS2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: PATENTIN VERSION 3.3
                                                                                                                                                                                                             APPLICANT: ALEXANDROV, Nickolai et al.
TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
TITLE OF INVENTION: ENCONDED THERBY
FILE REFERENCE: 2750-15799FUS2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: Parentin version 3.3
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6.0%; Score 147.5; DB 6; Length 302; 30.9%; Pred. No. 9.9e-05; tive 30; Mismatches 57; Indels 27;
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                                                                                                                                          Sequence 5129, Application US/10953349
Publication No. US20060107345Al
GENERAL INFORMATION:
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LENGTH: 323
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282 ENSNBEDYVTEKFFQSLVTGAIPVVIGAPNI-QEFSFGEGAILHIKELDDVPSIAKTMKH 340
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Publication No. US206012305A1

GENERAL INFORMATION:

APPLICANT: National Institute of Agrobiological Sciences.

APPLICANT: The Institute of Physical and Chemical Research.

APPLICANT: Foundation for Advancement of International Science.

APPLICANT: Foundation for Advancement of International Science.

TILLE OF INVENTION: FULL-LENGTH PLANT CDNA AND USES THEREOF

FILE REFERENCE: MOA-A02051-08

CURRENT FILING DATE: 2003-05-20

PRIOR PLICATION NUMBER: US 2002-203269

PRIOR FILING DATE: 2002-05-30

PRIOR FILING DATE: 2002-05-30

PRIOR FILING DATE: 2002-12-11

NUMBER OF SEQ ID NOS: 56791

SOUTHARE: Patentin Ver. 2.1
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                                                                                            341 IASNQEAFNQSLRWKYDGPSD-----SFKALID 368
                                                                 295 LHAHQNAYLDML---YENPLNTIDGKAGFYQDLSFEKILD 331
                                                                                                                                                                                                               Sequence 4748, Application US/11293697
Publication No. US20060105376A1
GENERAL INFORMATION:
TITLE OF INVENTION: Novel full length CDNA
FILE REFERENCE: HI-A01106
CURRENT PELLING DAITE: 2005-12-05
PRIOR APPLICATION NUMBER: US/11/293,697
CURRENT FILING DATE: 2005-12-05
PRIOR PILING DATE: 2005-12-05
PRIOR FILING DATE: 2002-03-28
FRIOR FILING DATE: 2002-03-28
SOFTWARE: PATENTIN NOS: 5458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
ORGANISM: Homo sapiens
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Best Local Similarity
Matches 58; Conserv
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LENGTH: 336
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                                                                 Gaps
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Sequence 24, Application US/10537642

Publication No. US20060165719A1

GENERAL INFORMATION:

APPLICANT: Epimmune, Inc.

APPLICANT: Epimmune, Inc.

APPLICANT: Secretary of the Navy

APPLICANT: Secretary of the Navy

APPLICANT: Secretary of the Navy

APPLICANT: Carucci, Daniel I.

APPLICANT: Carucci, Daniel J.

APPLICANT: Sidney, John

APPLICANT: Southwood, Scott

TITLE OF INVENTION: PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE

FILE REFERENCE: EPI-103X

CURRENT APPLICATION NUMBER: US/10/537,642

CURRENT FILING DATE: 2005-12-06

PRIOR APPLICATION NUMBER: US 60/431,494

MINDER OF STING DATE: 2002-12-06

MINDER OF STING DATE: 2002-12-06
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; Score 129.5; DB 6; Length 246; ; Pred. No. 0.0024; 45; Mismatches 89; Indels 51
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US-10-537-642-24
      5.3%;
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SOFTWARE: PatentIn version 3.2
SEQ ID NO 24
LENGTH: 1781
   Query Match
Best Local Similarity 22.9%
Matches 55; Conservative
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Db 1864 AEYNQSNIEYISNYDKNYSHIQQYTNGFCYTNNNQYINNTELTNNSSY-IYNN 1915  Qy 445 AYQKS 449  Db 1916 SYMNN 1920  RESULT 10  US-10-537-642-21	pplication US/10537642  TUS20060165719A1  AUTZO060165719A1  AUTZON  TUSZO060165719A1  AUTZON  THE UNITED States of America as Represented by the ecretary of the Navy  THE UNITED STATES OF THE Navy  THE UNITED STATES OF THE NAVY  THE UNITED STATES OF THE NAVY  THE USAMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE  THE REL-103X  THE REL-103X  THE OFFICE OFFICE OFFICE OFFICE OFFICE OFFI  THE NATION PUMBER: US 60/431,494  DATE: 2005-06-06  THE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE OFFICE	OY 218 YKVKNKNEFLSQYKFNLCFENSGGYGYTZEKILDAY-FSHTIPIYWGSPSVAKDFNPGSF 276  Db 882 YMMNIENFYLDIFEKIKNYDYNESNNKRQKEKHIVNFKDDFRNIEKKSNYKOS 936  OY 277 VNVHDFNNFDEAIDYIRYLHAHQNAYLDM
283 NNFDEAIDYIRYLHAHQNAYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNIII	Db 948 DDNNINWDNLETINEGANNHENNKKWNVFNNSILIERNEKITNSKKKNNYKIHOR 1003  RESULT 9  US-10-537-642-10  US-10-537-642-10  Sequence 10, Application US/10537642  Publication No. US20060165719A1  APPLICANT: Epimmune, Inc.  APPLICANT: Epimmune, Inc.  APPLICANT: Sette, Alessandro  APPLICANT: Sette, Alessandro  APPLICANT: Sette, Alessandro  APPLICANT: Sette, Alessandro  APPLICANT: Sette, Alessandro  APPLICANT: Sette, Daniel J.  APPLICANT: Sette, Daniel J.  APPLICANT: Sette, Daniel J.  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: Southwood, Scott  APPLICANT: SIMININGNESSERVENDENTHIPPINGNINGNINGNINGNINGNINGNINGNINGNINGNI	131 YKAMLVNDTTSPYKLKALYTLKKPSHKFKENHPNLCALIHNESDPWKRGFASFVASNPNA 190

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Indels 147; Gaps 26;
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NKGINKYILDYYREKALITDVN 1112
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RYIEVLKKEGWRDQIYLYWSSK 996
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NNLIEDKNKNDFRNHIK 1162
                                                                            AND METHODS OF USE
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APPLICANT:
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                                                                                                                                   APPLICANT: Doolan, Denise L.
APPLICANT: Carucci, Denise L.
APPLICANT: Carucci, Denise L.
APPLICANT: Carucci, Denise L.
APPLICANT: Southwood, Scott
TITLE OF INVENTION: PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE
FILE REFERENCE: EPI-103X
CURRENT PELING DATE: 2005-06-06
RIOR APPLICATION NUMBER: US 60/431,494
RIOR FILING DATE: 2002-12-06
NUMBER OF SEQ ID NOS: 116.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          89; Mismatches 175; Indels 123;
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             Sequence 9, Application US/10537642
Publication No. US20060165719A1
GENERAL INFORMATION:
APPLICANT: Epimmune, Inc.
APPLICANT: The United States of America as Represented by the APPLICANT: Secretary of the Navy
APPLICANT: Secretary of the Navy
APPLICANT: Secretary of the Navy
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4.7%; Score 116.5; DE
Best Local Similarity 19.4%; Pred. No. 0.64;
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Publication No. US20060165719A1
                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
ORGANISM: Plasmodium falciparum
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LENGTH: 2133
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US-10-537-642-9
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60 HSNPNEPSDLVFGNPLEQ---ARKILSYQNTKRVF---YTGENEVPNFNLFDYAIG--FD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       725 DIEVTHNNOSFFFNTNOIENEKKKRON-----NNNNIKTHIANFNIH-----K
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                  APPLICANT: Southwood, Scott
TITLE OF INVENTION: PLASMODIUM FALCIPARUM ANTIGENS AND METHODS OF USE
FILE REFERENCE: EPI-103X
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2632, Application US/10471571A
Publication No. US20060115490A1
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GENERAL INFORMATION:
GURENT CHIRON SPA
TITLE OF INVENTION:
FILE REFERENCE: P026927WO
CURRENT APPLICATION NUMBER: US/10/471,571A
CURRENT FILING DATE: 2001-09-12
PRIOR APPLICATION NUMBER: GB-0107661.1
PRIOR APPLICATION NUMBER: GB-0107661.1
NUMBER OF SEQ ID NOS: 5642
SOFTWARE: SeqWin99, version 1.03
SEQ ID NO 2632
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 4.5%; Score 111.5; DB 6; Length 1464; Best Local Similarity 21.0%; Pred. No. 0.99; Matches 90; Conservative 66; Mismatches 152; Indels 121;
                                                                                                                           CURRENT APPLICATION NUMBER: US/10/537,642
CURRENT FILING DATE: 2005-06-06
PRIOR APPLICATION NUMBER: US 60/431,494
PRIOR FILING DATE: 2002-12-06
NUMBER OF SEQ ID NOS: 1161
SOFTWARE: PatentIn version 3.2
                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT ORGANISM: Plasmodium falciparum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TYPE: PRT ORGANISM: Staphylococcus aureus
Carucci, Daniel J.
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994 MIQGDNDDM 1002
                          Sidney, John
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US-10-471-571A-2632
                                                                                                                                                                                                                                                                                                         SEQ ID NO 27
LENGTH: 1464
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                                                                                                                                                                                                               172 ESDPWKRGFASFVASNPNAPIRNAFYDALMAIEPVASGGSVKNTLGYKVKNKNEFLSQYK 231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           266 S-----VAKDFNPKSFVN-VHDF----NNFDEAIDYIRYLHAHQNAYLDMLY--- 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          352 ALHRDLNEPLVSVDDLRRDHDDLRV------NYDDLRVNYDDLRVNYDDLRVNY- 399
                                                                                                                                                                                                                                                                             125 YYAYL----HY------KAMLVNDTTSPYKLKALYTLKKPSHKFKE--NHPNLCALIHN 171
                                                                                                                                                                     44 DFILHFILKQRYKIILHSNPNEPSDLVFGNP------LEQA--RKILSYQNTK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -----ENPLATIDGK---AGFYQDLSF---EKILDFFKNILENDTIYHCNDAHYS
                                                                             Query Match 4.5%; Score 111.5; DB 6; Length 2397;
Best Local Similarity 19.8%; Pred. No. 2;
Matches 100; Conservative 78; Mismatches 157; Indels 171; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: CHIRON SPA
TITLE OF INVENTION: STAPHYLOCOCCUS AUREUS PROTEINS AND NUCLEIC ACIDS
FILE REFERENCE: P026927WO
CURRENT APPLICATION NUMBER: US/10/471,571A
CURRENT FILING DATE: 2003-09-12
PRIOR APPLICATION NUMBER: GB-0107661.1
PRIOR FILING DATE: 2001-03-27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
4.5%; Score 111; DB 6; Length 554;
Best Local Similarity 18.5%; Pred. No. 0.27;
Matches 104; Conservative 85; Mismatches 180; Indels 194;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1450 NEVVSRQGNHVALVMNDLTMTYETLR 1475
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// OTHER INFORMATION: alkaline phosphatase
US-10-471-571A-5504
; NAMB/KEY: MISC_FEATURB
; JOCATION: (1)...(2397)
; OTHER INFORMATION: hypothetical protein
US-10-471-571A-2632
                                                                                                                                                                                                                                                                                                                                                                                                             232 FNLCFENSQGYGYVTEKILDAY-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 5504, Application US/10471571A Publication No. US20060115490A1 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
ORGANISM: Staphylococcus aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQ ID NOS: 5642
SOFTWARE: SegWin99, version 1.03
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                                                                                                                                                                   86 GKLKAIPNSD--SYIQKRDVPIFNKKVNGYHVWIKGYNNDITEMHWTLWKYLILTCLVVL 143
                                                                                                                                                                                                                                124 --LYYAYLHYKAML---VNDTTSPYKLKA--LYTLKKPSHKFKENHPNLCALIHNESDPW 176
                                                                                                                                                                                                                                                                                                                                                177 KRGFASFVASNPNA--------PIRNAFYDALNAIBPVASGGSVKNTLGYKVK 221
                                                                                                                                                                                                                                                                                                                                                                                        240 NK-AYYEQFNISHNIEQVGYHGYVNTEIEQLILESFKVEKPİYEQLEVAINQVHAKYFDI 298
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | : | | | : | | | 355 TLIDGAKND---AESLDMFLNIILKESNRIESLVTDLLDLSHIEQHTELDTDYMNLSDLT 411
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ----- DLRVNYDD----LRV 397
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                              222 NKNBFLSQYKFNLCFENSQGYGYVT---EKILDAYFSHTIPIYWGSPSVAKDFNPKSF--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -------VNVHDFNNFDEAIDYIRYLHAHQNAYLDMLYENPLNTIDGKA-
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Sequence 4624, Application US/10471571A

Sequence 4624, Application US/10471571A

Publication No. US20060115490A1

GENERAL INFORMATION:

APPLICANT: CHIRON SpA

TITLE OF INVENTION: STAPHYLOCOCCUS AUREUS PROTEINS AND NUCLBIC ACIDS

TITLE OF INVENTION STAPHYLOCOCCUS AUREUS PROTEINS AND NUCLBIC ACIDS

CURRENT APPLICATION NUMBER: US/10/471,571A

CURRENT APPLICATION NUMBER: US/10/471,571A

CURRENT APPLICATION NUMBER: GB-0107661.1

PRIOR PILING DATE: 2001-09-17

NUMBER OF SEQ ID NOS: 5642

NUMBER OF SEQ ID NOS: 5642

SOFFWARE: SeqWin99, version 1.03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels 171;
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                                                                                                                                                                                                                                                                 46 ILH----FILKQRYKIILHSNPNBPSDLVFGNPLEQARKILSYQN-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          398 NYDDLRVNYD----DLRRDHDDLRRDHERL--
                                                                                                                94 GE-NEVPNFNLFDYAIGPDELDFND-----
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; OTHER INFORMATION: hypothetical protein US-10-471-571A-4624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          369 R---DHDDLRVNYDDLRVNYD-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -----NTSFKIYRKAYOK 448
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ORGANISM: Staphylococcus aureus
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQ ID NO 4624
LENGTH: 1050
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64NEPSDLVPGNPLEQARKILSYQNTKRVFYTGENEVPNFN 102	103 LFDYAIGFDELDFNDRYLRMPLYYAYLHYKAMLUNDTTSFY 143	144 KKALYTLKKPSHKFKENHPNLCALIHNESDPWK 177 :     :     :     :     295 ERISSVNGPPGTGKTTLLKDIFAHLVVERGKELAKLNNPKDAFVKTKIHETDDKYVYLLK 354	178 RGFASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTIGYKV 220                             355 ESIAKYKMVVASSNNGAVENISKD-PKIEEIIRNPEKCKFPKYEQNYANLAHEL 408	221 KNKNEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNFKS 275	276 FVNVHDFNNFDBAIDYIRYLHAHQNAYLDMLYENPLNTIDGKAGFYQDLSF 326   :   :   :   :   :   :   :   :	327 EKILDPFKNILENDTIYHCNDAHYSALHRDLNEPLVSVDDLRRDHDDLRVNYDDLRVNYD 386   :::	387 DLRVNYDDLRVNYDDLRVNYDDLRRDHDDLRRDHENLLSKATPLLELSQNTSFKIYRKAY 446	447 QKSL 450 
175	103		355					
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Search completed: August 11, 2006, 19:54:01 Job time : 19.3294 secs

- protein search, using sw model OM protein

Run on:

August 11, 2006, 19:53:30 ; Search time 118.313 Seconds (without alignments) 1723.552 Million cell updates/sec

US-10-764-212-16 Title: Perfect score:

446 1 MFQPLLDAYVBSASIEKMAS......KIYRKAYQKDIKNPYPYCAP 446 Sequence:

OLIGO Gapop 60.0 , Gapext 60.0 Scoring table:

2589679 seqs, 457216429 residues Searched:

7 Word size :

2589342 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Listing first 45 summaries

A_Geneseq_8:* 1: geneseqp19 Database :

genesequ1980s:* genesequ1990s:* genesequ2000s:* genesequ2001s:* genesequ2003s:* genesequ2003s:* genesequ2004s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

geneseqp2006s:* ..

SUMMARIES

STI	Description	Aeb70145 Helicobac	Aeb70205 H. pylori	Aeb70199 H. pylori	Adj77816 Helicobac	Adj27351 Alpha-1,3	Aeb70137 Helicobac	Adj77810 Helicobac	Adj27345 Alpha-1,3	Aeb70131 Helicobac	Aeb70201 H. pylori	Aeb70195 H. pylori	Adj77812 Helicobac	Adj27347 Alpha-1,3	Aeb70133 Helicobac	Abu52257 Helicobac	Abg30885 H. pylori	Adj77820 Helicobac	Adj27355 Alpha-1,3	Aeb70141 Helicobac	Abg30884 H. pylori	He	Aeb70193 H. pylori	Aeb70204 H. pvlori
SUMMAKIES	EI .	AEB70145	AEB70205	AEB70199	ADJ77816	ADJ27351	AEB70137	ADJ77810	ADJ27345	AEB70131	AEB70201	AEB70195	ADJ77812	ADJ27347	AEB70133	ABU52257	ABG30885	ADJ77820	ADJ27355	AEB70141	ABG30884	AEB70149	AEB70193	AEB70204
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	Query Match Length DB	446	247	256	277	277	277	486	486	486	245	391	432	432	432	418	424	425	425	425	476	456	231	246
de	Query Match	100.0	15.2	15.2	15.2	15.2	15.2	13.2	13.2	13.2	12.1	12.1	12.1	12.1	12.1	11.9	11.9	11.9	11.9	11.9	11.9	11.2	10.8	10.8
	Score	446	68	68	68	68	68	59	59	59	54	54	54	54	54	23	53	53	23	23	53	20	48	48
	Result No.		7	m	4	Ŋ	9	7	œ	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23

Aeb70203 H. pylori Aeb70197 H. pylori Abg30882 H. pylori		Aeb70135 Helicobac Abu51151 Helicobac Aeb70190 H. pvlori	He				Aeb70206 Helicobac Aab10737 H. pylori	Abu51565 Helicobac Aeb70202 H. pylori	Abu51720 Helicobac Aeb70154 H. pylori
æ <b>r</b> c	14.0	W H C	· (V) 00				10.10	10.00	0.#
9 AEB70203 9 AEB70197 5 ABG30882	000	9 AEB7013 5 ABU5115 9 AER7019	900	ı vo vo	ιnα	8 ADJ27353 9 AEB70139	9 AEB70200	5 ABU51569 9 AEB70203	ഗര
.8 246 .8 377	0000	0.8 485 9.9 169	. 9 545	.6 501	.5 454 .5 92	.5	.3 250 .8 35	7.6 89	.3 146 .3 227
48 10 48 10	48 10	-	· 4• (*	43.0	38 9	38	37 8 35 7		28 6
25 25 26	22.0	30 30 1	35	 4	36	8 6 6 6	40 41	42 43	44 45

## AL IGNMENTS

Helicobacter pylori fucosyl transferase, PutB, protein, SEQ ID NO: 16. AEB70145 standard; protein; 446 AA. 06-OCT-2005 (first entry) AEB70145; 

Fucosyltransferase; protein production; enzyme /note= "Encoded by AG" 'note= "Encoded by AG" 'note= "Encoded by GC" Location/Qualifiers Helicobacter pylori; strain 1111. Key Misc-difference 168 Misc-difference 355 Misc-difference 408 Misc-difference 435

US2005164338-A1

/note= "Encoded by AG"

28-JUL-2005.

22-JAN-2004; 2004US-00764212.

22-JAN-2004; 2004US-00764212.

(NEOS-) NEOSE TECHNOLOGIES INC. (UYAL-) UNIV ALBERTA.

Bezila DJ; Simala-Grant J, Taylor D, Johnson KF,

WPI; 2005-521417/53. N-PSDB; AEB70144.

New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.

Claim 1; SEQ ID NO 16; 97pp; English.

The present invention provides alpha-1,3/4-fucosyltransferase (also

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Gaps

180

180 240 240 300

120

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termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polymucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   241 SQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKEFVNVHDFNNFDEAIDYIKYLHTH 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 ONPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYL 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FutB, protein, ORF19C2B.pep SEQ ID NO: 76.
                                                                                                                                                                                                                                                                                                      61 QNPNEFSDLVFSNPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYL
                                                                                                                                                                                                                                                                                                                                                                          121 RMPLYYDRLHHKAESVNDTTSPYKLKONSLYTLKKPSHQFKENHPNLCAVVNDESDPLKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 MFQPLLDAYVESASIEKMASKSPPPLKIAVANWWGDEEIKEFKKSVLYFIFSQRYTIALH
                                                                                                                                                                                                                                                                                                                                                                                                                   GVVSFVASNANAPMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN
                                                                                                                                                                                                                                                                                                                                                                                                                                              181 GVVSFVASNANAPMRNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN
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                                                                                                                                                                                                                                                                                                                                                  RMPLYYDRLHHKAESVNDTTSPYKLKDNSLYTLKKPSHQFKENHPNLCAVVNDESDPLKR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLASIDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYBRLLLQNASPLLBL
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                                                                                                                                                  DB 9; Length 446;
                                                                                                                                                                                  Indels
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                                                                                                                                                                                  ;
                                                                                                                                                  100.0%; Score 446; 100.0%; Pred. No. 0;
                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SONTSFKIYRKAYOKPIKNPYPYCAP 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fucosyltransferase; protein production.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   standard; protein; 247 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Helicobacter pylori; strain 19C2

 H. pylori fucosyl transferase,

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                                                                                                                                                                                  Matches 446; Conservative
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                                                                                                                                                                 Best Local Similarity
                                                                                                                     Sequence 446 AA;
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                                                                                                                                                  Query Match
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                                                                                                                The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose readiue from a donor substrate to an acceptor substrate. The fucosyltransferase polynuclecties and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase (amino acids 1-247)
                                                                                                                                                                                                                                                                                                                                                                                                             74 NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYYDRLHHK 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                             New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                       73 NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYYDRLHHK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              5.
                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              H. pylori fucosyl transferase, FutB, protein fragment, SEQ ID NO:
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                                                                                                                                                                                                                                                                                                                    Length 247;
                                                                                                                                                                                                                                                                                                                                                       0; Indels
                                                                                                                                                                                                                                                                                                                  15.2%; Score 68; DB 9; Le
100.0%; Pred. No. 1.4e-57;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fucosyltransferase; protein production; enzyme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; SEQ ID NO 70; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Johnson KF,
                                                                                   Disclosure; SEQ ID NO 76; 97pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (NEOS-) NEOSE TECHNOLOGIES INC (UYAL-) UNIV ALBERTA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Taylor D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               06-OCT-2005 (first entry)
                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 133 AESVNDTT 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                134 AESVNDTT 141
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                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                  protein fragment.
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                                                                                                                                                                                                                                                                                   Sequence 247 AA;
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                                                                                                                                                                                                                                                                                                                                                         68;
                                                                                                                                                                                                                                                                                                                    Query Match
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AEB70199
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73 NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYYDRLHHK 132
                    74 NPLGSARKILSYQNAKRVPYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYYDRLHHK 133
                                                                                                                                                                                                                   ADJ27351 standard; protein; 277 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (NEOS-) NEOSE TECHNOLOGIES INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-JUL-2002; 2002US-0398156P. 08-NOV-2002; 2002US-0424894P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Claim 1; Fig 4; 84pp; English.
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                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Johnson KF, Bezila DJ;
                                                                              133 AESVNDTT 140
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134 AESVNDTT 141
                                                                                                              134 AESVNDTT 141
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 277 AA;
                                                                                                                                                                                                                                                                                                                                                                                               fucosyl; fucose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO2004009793-A2.
                                                                                                                                                                                                                                                                                              20-MAY-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-JAN-2004.
                                                                                                                                                                                                                                                          ADJ27351;
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ADJ27351
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                                                                                                                                       73 NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYYDRLHHK 132
                                                                                                                                                           53 NPLGSARKILSYQNAKRVPYTGENEVPNFNLPDYAIGFDELDFRDRYLRMPLYYDRLHHK 112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This invention relates to novel isolated polynucleotides and the encoded
                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FutA, FutB, alpha 1-3/4 fucosyltransferase, glycoprotein, glycolipid, fucose, N-acetylglucosamine, glycoconjugate, enzyme.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New isolated polynucleotide encoding fucosyltransferase protein, usefu
for synthesizing oligosaccharide moiety on a protein or lipid that is
unglycosylated in its native form or for synthesizing glycolipids.
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                                                        15.2%; Score 68; DB 9; Length 256; 100.0%; Pred. No. 1.4e-57; ive 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Helicobacter pylori strain 19C2 FutB protein SegID 8.
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                                                                                                                                                                                                                                                                                                                                                         ADJ77816 standard; protein; 277 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                23-JUL-2002; 2002US-0398156P.
08-NOV-2002; 2002US-0424894P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                68; Conservative
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                                                                                                                                                                                                                   133 AESVNDTT 140
                                                                                                                                                                                                                                                      113 AESVNDTT 120
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                                                        Query Match
Best Local Similarity
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                      Sequence 256 AA;
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Best Local Si
Matches 68;
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                                                                                                Matches
                                                                                                                                                                                                                                                                                                                RESULT 4
ADJ77816
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         74 NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYYDRLHHK 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This sequence represents an alpha-1,3/4-fucosyltransferase protein which was used in the method of the invention for producing a fucosylated glycoprotein. The method involves contacting a recombinant fucosyltransferase protein with a mixture comprising a donor substrate which comprises a fucosyl residue, and an acceptor substrate on a glycoprotein, under conditions such that the fucosyltransferase protein catalyzes the transfer of the fucosy residue from a donor substrate to the acceptor substrate on the glycoprotein. The method is useful for producing fucosylated glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate and acceptor substrate on glycoprotein.
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                                                                                      alpha-1; 3/4-fucosyltransferase; glycoprotein; fucosyltransferase;
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15.2%; Score 68; DB 8; Length 277;
Best Local Similarity 100.0%; Pred. No. 1.5e-57;
Matches 68; Conservative 0; Mismatches 0; Indels
Alpha-1,3/4-fucosyltransferase coding sequence.
                                                                                                                                                                                                                                  Helicobacter pylori; strain 19C2 FutB.
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RESULT 6 AEB70137

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Gaps

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Conservative

Local Similarity nes 68; Conserva

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
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                                                                                                                                               Helicobacter pylori fucosyl transferase, PutB, protein, SEQ ID NO: 8.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Helicobacter pylori strain 1182 FutB protein SeqID 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Simala-Grant J, Taylor D, Johnson KF, Bezila DJ;
                                                                                                                                                                                                Fucosyltransferase; protein production; enzyme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example 1; SEQ ID NO 8; 97pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADJ77810 standard; protein; 486 AA.
AEB70137 standard; protein; 277 AA.
                                                                                                                                                                                                                                                 Helicobacter pylori; strain 19C2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (NEOS-) NEOSE TECHNOLOGIES INC.
                                                                                                                                                                                                                                                                                                                                                                                                 22-JAN-2004; 2004US-00764212
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                                                                                                    (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            UNIV ALBERTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2005-521417/53.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB; AEB70136
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 277 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO2004009838-A2
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                                                                                                    06-OCT-2005
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                                                AEB70137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (UYAL-)
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ADJ77810
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This invention relates to novel isolated polynucleotides and the encoded polypeptides thereof, which are related to the fucosyltransferase enzymes (FutA and FutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycoproteins and glycolipids with the desired oligosaccharide moieties (i.e. by transfer of a fucose residue to N-acetylglucosamine), such that they are useful in the preparation of altocoyltransferase is unaffected by the sialyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, bacterially expressed enzymes offer a large cost saving relative to mammalian expression systems. This polypeptide sequence is an H. pylori strain 1182 FutB protein sequence of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  400 DDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYERLLQNASPLLELSQNT 458
                                                                                                                                                                                                                            New isolated polynucleotide encoding fucosyltransferase protein, useful for synthesizing oligosaccharide moiety on a protein or lipid that is unglycosylated in its native form or for synthesizing glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 366 DDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYERLLQNASPLLBLSQNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   alpha-1; 3/4-fucosyltransferase; glycoprotein; fucosyltransferase;
fucosyl; fucose.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 486;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
13.2%; Score 59; DB 8; Le
Best Local Similarity 100.0%; Pred. No. 1.6e-48;
Matches 59; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Helicobacter pylori; strain 1182 FutB
                                                                                                                                                                                                                                                                                               Claim 16; SEQ ID NO 2; 72pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Alpha-1,3/4-fucosyltransferase.
                                                                                                              (NEOS-) NEOSE TECHNOLOGIES INC.
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                                                             23-JUL-2002; 2002US-0398156P. 08-NOV-2002; 2002US-0424894P.
                              23-JUL-2003; 2003WO-US023057.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bezila DJ:
                                                                                                                                                Bezila DJ
                                                                                                                                                                               WPI; 2004-123401/12.
N-PSDB; ADJ77809.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 486 AA;
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                                                                                                                                                Johnson KF,
29-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADJ27345;
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Gaps

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Indels

Length 486;

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WPI; 2004-132958/13.

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The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polynucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase (amino acids 1-245)
                                                                                                                                                                                                                                                                                                                                                                                                                                H. pylori fucosyl transferase, FutA, protein, 1111FutA.pep SEQ ID NO: 72.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                                                                                                                           400 DDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYERLLQNASPLLELSQNT
                                                                                                                                    366 DDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYERLLQNASPLLEI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               73 NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      72 NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDFYLRMPLYY
                                            Score 59; DB 9; I
Pred. No. 1.6e-48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       12.1%; Score 54; DB 9; L
100.0%; Pred. No. 6.6e-44;
iive 0; Mismatches 0;
                              13.2%; Sco...
100.0%; Pred. No....
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Johnson KF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; SEQ ID NO 72; 97pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Fucosyltransferase; protein production
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Helicobacter pylori; strain 1111.
                                                                                                                                                                                                                                                                                           AEB70201 standard; protein; 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (NEOS-) NEOSE TECHNOLOGIES INC
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                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                        Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Simala-Grant J, Taylor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (UYAL-) UNIV ALBERTA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2005-521417/53.
                                                                   Local Similarity
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Matches 54: Conser
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 protein fragment
Sequence 486 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 245 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US2005164338-A1
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                                                                                        59;
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                                            Query Match
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                                                                                      Matches
                                                                                                                                                                                                                                                 RESULT 10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BXXXXXX
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polynucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.
                                                                                                                                                                                              This sequence represents an alpha-1,3/4-fucosyltransferase protein which was used in the method of the invention for producing a fucosylated glycoprotein. The method involves contacting a recombinant fucosyltransferase protein with a mixture comprising a donor substrate which comprises a fucosyl residue, and an acceptor substrate on a glycoprotein, under conditions such that the fucosyltransferase protein catalyzes the transfer of the fucosy residue from a donor substrate to the acceptor substrate on the glycoprotein. The method is useful for producing fucosylated glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         400 DDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDTRULONASPLLELSONT 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                              Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate and acceptor substrate on glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  366 DDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYERLLQNASPLLELSQNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Helicobacter pylori fucosyl transferase, FutB, protein, SEQ ID NO: 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13.2%; Score 59; DB 8; Length 486; 100.0%; Pred, No. 1.6e-48; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bezila DJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            production; enzyme.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Johnson KF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 1; SEQ ID NO 2; 97pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AEB70131 standard; protein; 486 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Helicobacter pylori; strain 1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (NEOS-) NEOSE TECHNOLOGIES INC
                                                                                                                                                       Claim 1; Fig 1; 84pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      59; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            WPI; 2005-521417/53.
N-PSDB; AEB70130.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fucosyltransferase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                       N-PSDB; ADJ27344
                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 486 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US2005164338-A1
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Matches 5
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AEB7013 RESULT

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Bezila DJ

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Gaps 126 125

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0; Indels

06-OCT-2005 (first entry)

Length 245;

(UYAL-)

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Helicobacter pylori strain 1111 FutA protein SeqID 4.
                                                                                                                        Simala-Grant J, Taylor D, Johnson KF,
                                                                                                                                                                          Disclosure; SEQ ID NO 66; 97pp; English
                                                                                                                                                                                                                                                                                                                                                    ADJ77812 standard; protein; 432 AA
                           Helicobacter pylori; strain 1111.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (NEOS-) NEOSE TECHNOLOGIES INC.
                                                                                                   NEOS-) NEOSE TECHNOLOGIES INC
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2002US-0424894P.
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                                                                                    22-JAN-2004; 2004US-00764212.
                                                                                                                                                                                                                                                                                                                                                                                  (first entry
                                                                                                                                                                                                                                                                                    54; Conservative
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                                                                                                          UYAL- ) UNIV ALBERTA
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                                                                                                                                                                                                                                                                                                                                                                                                                                   Helicobacter pylori
                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                        Sequence 391 AA;
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                                         US2005164338-A1
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                                                        28-JUL-2005
                                                                                                                                                                                                                                                                                                                                                                   ADJ77812;
                                                                                                                                                                                                                                                                                    Matches
                                                                                                                                                                                                                                                                                                                                       RESULT 12
                                                                                                                                                                                                                                                                                                                                              ADJ77812
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This invention relates to novel isolated polynucleotides and the encoded polypeptides thereof, which are related to the fucosyltransferase enzymes (PutB and PutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycoproteins and glycolipids with the desired oligosaccharide moieties (i.e. by transfer of a fucose residue to N-acetylglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial fucosyltransferase is unaffected by the sialyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, bacterially expressed enzymes offer a large cost saving relative to mammalian expression systems. This polypeptide sequence is an H. pylori strain 1111 FutA protein sequence of the invention.
                                                                            New isolated polynucleotide encoding fucosyltransferase protein, usefu for synthesizing oligosaccharide moiety on a protein or lipid that is unglycosylated in its native form or for synthesizing glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  alpha-1; 3/4-fucosyltransferase; glycoprotein; fucosyltransferase;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   73 NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 432;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 8;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Helicobacter pylori; strain 1111 FutA.
                                                                                                                                                                      Claim 16; SEQ ID NO 4; 72pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADJ27347 standard; protein; 432 AA
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                 WPI; 2004-123401/12.
N-PSDB; ADJ77811.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2004-132958/13.
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Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-PSDB; ADJ27346,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 432 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO2004009793-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           fucosyl; fucose
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               20-MAY-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADJ27347;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polynucleotides and polypeptides are useful for the sequence is Helicobacter pylori fucosyltransferase of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase catalytic domain (amino acids 27-417) protein fragment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FutA, FutB, alpha 1-3/4 fucosyltransferase, glycoprotein, glycolipid, fucose, N-acetylglucosamine, glycoconjugate, enzyme.
H. pylori fucosyl transferase, FutA, protein fragment, SEQ ID NO: 66.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
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                                                                                                                                                                                                                                                                                                                                                                       Bezila DJ;
                                          Fucosyltransferase; protein production; enzyme
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This sequence represents an alpha-1,3/4-fucosyltransferase protein which

Claim 1; Fig 2; 84pp;

Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate and acceptor substrate on glycoprotein.

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Gaps

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Protein-protein interaction; ulcer; selected interacting domain; SID.

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Helicobacter pylori selected interacting domain (SID) protein #1601.

ABU52257 standard; protein; 418 AA

RESULT 15
ABUS2257
ID ABUS2:

07-MAY-2003 (first entry)

ABU52257;

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synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
              glycoprotein. The method involves contacting a recombinant through transferase protein with a mixture comprising a donor substrate which comprises a fucosyl residue, and an acceptor substrate on a glycoprotein, under conditions such that the fucosyltransferase protein catalyzes the transfer of the fucose residue from a donor substrate to the acceptor substrate on the glycoprotein. The method is useful for producing fucosylated glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polynucleotides and polypeptides are useful for the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Helicobacter pylori fucosyl transferase, FutA, protein, SEQ ID NO: 4.
                                                                                                                                                                                                                                     Gaps
 was used in the method of the invention for producing a fucosylated
                                                                                                                                                                                                                                                                                             NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYY 125
                                                                                                                                                                                                                                                                        73 NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYY
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                                                                                                                                                                                                 Length 432;
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                                                                                                                                                                                                                    Pred. No. 1.1e-43;
                                                                                                                                                                                                12.1%; Score 54; DB 8;
100.0%; Pred. No. 1.1e-4:
iive 0; Mismatches (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Fucosyltransferase; protein production; enzyme
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Johnson KF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 1; SEQ ID NO 4; 97pp; English
                                                                                                                                                                                                                                                                                                                                                                                                   AEB70133 standard; protein; 432 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Helicobacter pylori; strain 1111.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         22-JAN-2004; 2004US-00764212.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                     54; Conservative
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                                                                                                                                                                                                                    Similarity
                                                                                                                                                              Sequence 432 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                New complexes of protein-protein interactions in Helicobacter pylori, useful for identifying modulating compounds for treating or preventing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     218 NKSEFLSQYKENLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK 270
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ive 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 6; Page 479; 642pp; English
                                                                                                                                                                                                                                                                                                                                                     Colland F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         represent an illegible residue
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                                                                                                                                                                                                                                                                      02-JAN-2001; 2001US-0259302P
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Best Local Similarity 100.
Matches 53; Conservative
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(INSP ) INST PASTEUR
                                                                                                                                                                                                                                                                                                                                                     Legrain P, Rain J,
                                                                                                                                          Helicobacter pylori
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                ulcers in mammals.
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Score 54; DB 9; Length 432; Pred. No. 1.1e-43;

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Similarity

Query Match Best Local

Matches

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72 NPLGSARKILSYONAKRVFYTGENEVPNFNLFDYAIGFDELDFRDKYLRMPLYY 125

73 NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYY

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OM protein - protein search, using sw model

August 11, 2006, 20:00:25 ; Search time 20.9374 Seconds (without alignments) 2049.570 Million cell updates/sec Run on:

US-10-764-212-16

446 1 MFQPLLDAYVESASIEKMAS......KIYRKAYQKPIKNPYPYCAP 446 Perfect score:

Sequence:

Gapop 60.0 , Gapext 60.0 OLIGO Scoring table:

283416 seqs, 96216763 residues Searched:

Word size :

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

1: pirl: * 2: pir2: * 3: pir3: * 4: pir4: * Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

ស្	Description	fucosyltransferase	fucosyltransferase	alpha-(1,3)-fucosy	alpha (1,3)-fucosy	ring finger protei	NADH2 dehydrogenas	alkaline phosphata	alkaline phosphata	rho-type GTPase-ac		sterol regulatory	copia polyprotein	ZK112.7 protein -	conserved hypothet	hypothetical prote	hypothetical prote	integral membrane	probable nucleotid	hypothetical prote		conserved hypothet			shikimate kinase (	hypothetical prote			hypothetical prote	concerned himothet
SUMMARIES	ID	C64567	C64601	G71862	B71914	T09482	T11260	S18408	B36307	S48535	B54962	A54962	OFFFCP	S44887	B82791	T10336	T18728	P97095	C97249	E82457	H97620	AG2843	H84992	AC1000	AD0019	G83712	E84078	AF1320	AF1692	G86717
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d	Query Match	11.9	11.9	10.3	. 10.3	2.0	1.8	1.8	1.8	1.8	1.8	1.8	٠	1.8	•	1.6		•	1.6	٠	1.6	٠	٠	1.6	•	1.6	•	1.6	1.6	1.6
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two-component resp shikimate kinase (	shikimate kinase I shikimate kinase I	probable heat shoc hypothetical prote	hypothetical prote	nypotneticai prote probable ATP-bindi	D-xylose-binding p probable thiamin b	probable peroxidas dTDPqlucose 4,6-de	peroxidase (EC 1.1	molybdenum transpo molybdenum transpo	
C69859 A65134	H91157 F86003	C96796 T22978	C90566	T34443 D71290	AH3527 T41198	H84767 G82014	S07407	BVECHD AR0595	
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30	333	16. E.	36	37 38	39 40	41	43	44 45	)

## ALIGNMENTS

C64567
fucosyltransferase - Helicobacter pylori (strain 26695)
C;Species: Helicobacter pylori
C;Date: 09-Aug-1997 #sequence revision 09-Aug-1997 #text_change 09-Jul-2004
C;Accession: C64567
R; Tomb, J.F.; White, O.; Kerlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, R.D.;
Peterson, S.; Loftus, B.; Richardson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McKenne,
son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey, L.
Nature 388, 539-547, 1997
A; Authors: Wallin, E.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser, C.A
A; Title: The complete genome sequence of the gastric pathogen Helicobacter pylori.
A;Reference number: A64520; MUID:97394467; PMID:9252185
A;Accession: C64567
A;Status: preliminary; nucleic acid sequence not shown; translation not shown
 A; Molecule type: DNA
A;Residues: 1-425 <tom></tom>
 A,Cross-references: UNIPROT:025142; UNIPARC:UP100000D70CA; GB:AE000554; GB:AE000511; NID:

0511; NID:

ö Gaps ö Query Match 11.9%; Score 53; DB 2; Length 425; Best Local Similarity 100.0%; Pred. No. 1.2e-48; Matches 53; Conservative 0; Mismatches 0; Indels

224 NKSEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK ઠે

# 225 NKSEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK 277 쉱

fucosyltransferase - Helicobacter pylori (strain 26695)

Cispeciaes: Helicobacter pylori Cispeciaes: Helicobacter pylori Cispeciaes: Helicobacter pylori Cispeciaes: Helicobacter pylori Cispeciaes: Helicobacter pylori Cispeciaes: Helicobacter pylori Cispeciaes: Melicobacter pylori Firmb, J.F.; White, O.; Kerlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, R.D.; Peterson, S.; Loftus, B.; Richardson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McKenney Son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey, L. Nature 388, 539-547, 1997 A;Authors: Wallin, E.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser, C.A A;Ritle: The complete genome sequence of the gastric pathogen Helicobacter pylori. A;Reference number: A64520; MUID:97394467; PMID:9252185 A;Recession: C64601 A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Wolecule type: DNA A;Residuses: 1-476 <10Ns A;Residuses: 1-476 <10Ns

Gaps ö Query Match 11.9%; Score 53; DB 2; Length 476; Best Local Similarity 100.0%; Pred. No. 1.4e-48; Matches 53; Conservative 0; Mismatches 0; Indels

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224 NKSEFLSQYKFNLCPENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK 276

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A,Cross-references: UNIPROT:015344; UNIPARC:UPI000012F0E6; EMBL:AF035360; NID:g2827993; F
C,Genetics:
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R;Black IV, W.C.; Robhrdanz, R.L.
Mol. Biol. Evol. 15, 1772-1785, 1998
A;Title: Mitochondrial gene order is not conserved in arthropods: prostriate and metastri
A;Reference number: Z17252; MUID:99083443; PMID:9866211
A;Reference number: Z17252; MUID:99083443; PMID:9866211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Genome: mitochondrion
C;Superfamily: NADH dehydrogenase (ubiquinone) chain 2
C;Keywords: membrane-associated complex; mitochondrion; NAD; oxidative phosphorylation; <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        alkaline phosphatase (BC 3.1.3.1) - rat
NyAlternate names: phytase
C;Species: Rattus norregicus (Norway rat)
C;Daccies: Rattus norregicus (Norway rat)
C;Daccession: S18408; S17576
R;Strom, M.; Krisinger, J.; DeLuca, H.F.
Biochim. Biophys. Acta 1090, 299-304, 1991
A;Title: Isolation of a mRNA that encodes a putative intestinal alkaline phosphatase regnalacession: S18408; MUID:92062729; PMID:1954251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NADH2 dehydrogenase (ubiquinone) (EC 1.6.5.3) chain 2 [similarity] - hardbacked tick (1xc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A,Molecule type: DNA
A,Residues: 1-318 <BLA>
A,Cross-references: UNIPROT:099805; UNIPARC:UPI0000976B1; EMBL:AP081828; NID:g4164542;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Molecule type: mRNA
A; Residues: 1-511 <STRA.
A; Residues: 1-511 <STRA.
A; Residues: 1-511 <STRA.
A; Cross-references: UNIPROT: P51740; UNIPARC: UPI0000132000
A; Cross-references: UNIPROT: P51740; UNIPARC: UPI00 is shown in Fig. 2; the corresponding
B; Yang, W.J.; Matsuda, Y.; Sano, S.; Masutani, H.; Nakagawa, H.
Biochim. Biophys. Acta 1075, 75-82, 1991
A; Title: Purification and characterization of phytase from rat intestinal mucosa.
A; Reference number: S17576; MUID: 91370007; PMID: 1654110
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C.Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 09-Jul-2004
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1.8%; Score 8; DB 2; Length 318;
Best Local Similarity 100.0%; Pred. No. 4;
Matches 8; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                           0; Indels
A;Status: preliminary; translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                              DB 2;
. 0.67;
                                                                                                                                                                                                                                                                                                                                       Query Match 2.0%; Score 9; DB 2 Best Local Similarity 100.0%; Pred. No. 0.6 Matches 9; Conservative 0; Mismatches
                                                                                                                                                                                                       A;Map position: Xp22.3
C;Superfamily: rfp transforming protein
F;6-65/Domain: RING finger homology <RRN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Cross-references: UNIPARC: UPI00000E5C7D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      197 AFYDALNSI 205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               616 AFYDALNSI 624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               327 SFKKILAF 334
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               154 SPKKILAF 161
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                                A; Molecule type: mRNA
A; Residues: 1-667 < PER>
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C;Species: Helicobacter pylori
A;Variety: strain J99
C;Decies: Helicobacter pylori
C;Avariety: strain J99
C;Accession: B71914
R;Alm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, B.D.; Doig, P.C.; Smith, D.R.; I ves, C.; Gibson, R., Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; Vovis, G.F.; Nature 397, 176-180, 1999
A;Title: Genomic sequence comparison of two unrelated isolates of the human gastric path A;Reference number: A1800; MUID:99120557; PMID:9923682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Residues: 16-454 <ARN>
A;Cross-references: UNIPROT:Q9ZLL3; UNIPARC:UPI00000D3665; GB:AE001491; GB:AE001439; NID
A;Experimental source: strain J99
                                                                                                                                                                                                                  C; Species: Helicobacter pylori
A; Variety: Strain J99)
C; Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004
C; Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004
C; Accession: G71862
B; Ashlm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, B.D.; Doig, P.C.; Smith, D.R.; Ives, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; Vovis, G.F.; Ives, C.; Genomic sequence comparison of two unrelated isolates of the human gastric path A; Reference number: A71800; MUID:99120557; PMID:9923682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Residues: 1-436 <ARN>
A;Cross-references: UNIPROT:092KD7; UNIPARC:UPI0000D36D2; GB:AE001528; GB:AE001439; NIC
A;Experimental source: strain J99
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C;Species: Homo sapiens (man)
C;Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 09-Jul-2004
C;Accession: T09482
R;Perry, J; Feather, S.; Smith, A.; Palmer, S.; Ashworth, A.
R;Description: The human FXY maps to chromosome Xp22.3: Implications for evolution of A;Reference number: 216687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
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225 NKSEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK 277
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                                                                                                                                                                                                       alpha-(1,3)-fucosyltransferase - Helicobacter pylori (strain J99)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            195 RNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                195 RNAFYDALNSIEPVTGGGSVKNTLGYNVKNKSEFLSQYKFNLCFEN 240
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ch 10.3%; Score 46; DB 2; Length 436; l Similarity 100.0%; Pred. No. 4.7e-41; 46; Conservative 0; Mismatches 0; Indels
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Matches 46; Conserv
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A,Gene: fucT
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Matches
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A;Molecule type: DNA
A;Residues: 1-1007 <VOS>
A;Cross-references: UNIPARC:UPI0000133814; EMBL:Z75035; MIPS:YOR127w; NID:g1420329; PID:
                                                                                                                                                                                        A;Experimental source: strain S288C
R;Wiemann, S.; Rechmann, S.; Benes, V.; Voss, H.; Schwager, C.; Vlcek, C.; Stegemann, J.;
Yeast 12, 281-288, 1996
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C;Species: Cricetulus griseus (Chinese hamster)
C;Bate: 23-Mar-1995 #sequence_revision 05-Apr-1995 #text_change 09-Jul-2004
C;Accession: B54962
R;Yang, J.; Sato, R.; Goldstein, J.L.; Brown, M.S.
Genes Dev. 8, 1910-1919, 1994
A;Fitle: Sterol-resistant transcription in CHO cells caused by gene rearrangement that the A;Reference number: A54962; MUID:95047343; PMID:7958866
                                                                                                                                                                                                                                                                                                                         A,Title: Sequencing and analysis of 51 kb on the right arm of chromosome XV from Sacchard A,Reference number: S63860; MUID:97060020; PMID:8904341
                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Status: nucleic acid sequence not shown; translation not shown
A;Status: nucleic acid sequence not shown; translation not shown
A;Rolecule type: DNA
A;Rolecule type: DNA
A;Rosidues: 1-1007 vMIW-
A;Cross-references: UNIPARC:UPI0000133814; EMBL:X90518; NID:g1050808; PID:g1050813
A;Cross-references: UNIPARC:UPI0000133814; EMBL:X90518; NID:g1050808; PID:g1050813
A;Chen, G: Zheng, L: Chan, C:S.M.
Mol. Cell siol. 16, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1376-1390, 1
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N;Alternate names: basic-helix-loop-helix-leucine zipper transcription factor SREBP-2
C;Species: Homo sapiens (man)
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A, Molecule type: DNA
A, Residues: 1-1007 <CHF>
A, Cross-references: UNIPARC: UP10000133814; GB:U07421; NID:9460972; PID:9460973
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A,Molccule type: mRNA
A,Residues: 1-1139 «YAN>
A,Residues: 1-1139 «YAN>
A,Residues: 1-1139 «YAN>
A,Cross-references: UNIPROT:Q60429; UNIPARC:UPI0000178926; GB:U12330
A,Note: 493 Ser was also found
C,Superfamily: sterol regulatory element binding protein
C,Keywords: DNA binding; membrane protein
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F;13-66/Domain: LIM metal-binding repeat homology <LIM2>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
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100.0%; Pred. No. 13;
tive 0; Mismatches
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ilarity 100.0%; Pred. No. 12;
Conservative 0; Mismatches
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A;Map position: 15R
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Matches 8; Conservative
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    A; Reference number: S66965
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les 8; Conserv
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                                               A; Accession: S67012
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A; Cross-references: UNIPROT: P39083; UNIPARC: UP10000133814; EMBL: U07421; NID: 9460972; PID
R; Wiemann, S.; Rechmann, S.; Benes, V.; Voss, H.; Schwager, C.; Vlcek, C.; Stegemann, J. submitted to the EMBL Data Library, August 1995
A; Description: Sequencing of 51 kilobases on the right arm of chromosome XV from S. cere
A; Reference number: $60983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Residues: 1-1007 <BEN>
A;Residues: 1-1007 <BEN>
A;Cross-references: UNIPARC:UP10000133814; EMBL:X94335; NID:g1262139; PID:e217748; PID:g
R;Voss, H.; Benes, V.; Rechmann, S.; Teodoru, C.; Schwager, C.; Paces, V.; Ansorge, W.
submitted to the Protein Sequence Database, Unly 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           alkaline phosphatase (BC 3.1.3.1), intestinal - mouse
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Date: 28-Mar-1991 #sequence_revision 28-Mar-1991 #text_change 16-Aug-2004
C;Accession B36307
R;Manes, T.; Glade, K.; Ziomek, C.A.; Millan, J.L.
Genomics 8, 541-554, 1990
A;Title: Genomics structure and comparison of mouse tissue-specific alkaline phosphatase
A;Reference number: A36307; MUID:91139124; PMID:2286375
A;Accession: B36307
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A;Residues: 1-1007 < WIE>
A;Residues: 1-1007 < WIE>
A;Cross-references: UNIPARC:UP10000133814; EMBL:X90518; NID:g1050808; PID:g1050813
R;Benes, V.; Andrade, M.A.; Rechmann, S.; Teodoru, C.; Banrevi, A.; Sander, C.; Valencia
Bubmitted to the EMBL Data Library, December 1995
A;Description: Nucleotide sequence and analysis of a 130 kb fragment of yeast chromosome
A;Reference number: 861643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: UNIPROT:P24822; UNIPARC:UPI000002749A; GB:M61705; NID:g194048; PIDN:
C;Superfamily: Alkaline phosphatase
C;Keywords: intestine; phosphoprotein; phosphoric monoester hydrolase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     rho-type GTPase-activating protein DBM1 - yeast (Saccharomyces cerevisiae)
N;Alternate names: protein 03290; protein YOR127w; protein YOR3290w
C;Species: Saccharomyces cerevisiae
C;Date: 02-Dec-1994 #sequence revision 02-Dec-1994 #text change 09-Jul-2004
C;Date: 02-Dec-1994 #sequence revision 02-Dec-1994 #toxt change 09-Jul-2004
C;Accession: $48535; $60987; $61683; $67012; $63864; JC6097
R;Chen, G; Zheng, L.; Chan, C.S.M.
A;Demitted to the EMBL Data Library, March 1994
A;Description: Molecular characterization of Dbml, a novel rhoGAP protein in yeast.
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                                                                                                                                                              1.8%; Score 8; DB 2;
100.0%; Pred. No. 6.7;
tive 0; Mismatches
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100.0%; Pred. No. 6.8;
tive 0; Mismatches
A,Note: 10-Val was also found
C,Superfamily: Alkaline phosphatase
C,Keywords: phosphoric monoester hydrolase
                                                                                                                                                          Query Match 1.8
Best Local Similarity 100.
Matches 8; Conservative
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                                                                                                                                                                                                                                                                                                                                 312 PLNALDGK 319
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A; Residues: 1-559 < MAN>
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les 8; Conserv
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Best Local S
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A;Crossraces: 1-/4 colm>
A;Crossraces: unipror: 09PPUJ; UNIPARC: UPI00001368FF; GB:AE003903; GB:AE003849; NID: A;Crossraces: UNIPROT: 09PPUJ; UNIPARC: UPI00001368FF; GB:AE003903; GB:AE003849; NID: A;Experimental source: strain 9a5c
B;Simpson, A.J.G.; Reinach, F.C.; Arruda, P.; Abreu, F.A.; Camargo, L.E.A.; Carraro, D.M.; Carrer, H. Briones, M.R.S.; Bueno, M.R.P.; Camargo, A.A.; Camargo, L.E.A.; Ferreira, A.J.S.
submitted to GenBank, June 2000
A;Authors: Ferreira, V.C.A.; Ferro, J.A.; Fraga, J.E.; Franca, S.C.; Franco, M.C.; Frohms
A;Authors: Perreira, M.L.; Kemper, E.L.; Kitajima, J.P.; Krieger, J.B.; Kuramae, E.E.; Laigre chado, M.A.; Madeira, A.M.B.N.; Madeira, M.Y.; Marcins, E. B.; Laigre chado, M.A.; Matthors: M.Y.; Martins, E.M.F.; Matthors: M.C.; de Oliveira, M.C.; de Oliveira, M.C.; de Oliveira, M.C.; de Sawasaki A;Authors: da Silva, A.G.R.; da Silva, M.A.; de Sa, R.G.; Santelli, R.V.; Sawasaki A;Ruthors: and M.Y.; Vallada, H.; Van Sluys, M.A.; Verjovski-Almeida, S.; Vettore, A.L.; Za, A;Contents: annotation
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C;Species: Xylella fastidiosa
C;Date: 18-Aug-2000 #sequence_revision 20-Aug-2000 #text_change 09-Jul-2004
C;Accession: B82791
C;Accession: B82791
Nature 406, 151-157, 2000
A;Fitle: The genome sequence of the plant pathogen Xylella fastidiosa.
A;Reference number: A82515; MUID:20365717; PMID:10910347
A;Note: for a complete list of authors see reference number A59328 below
A;Status: preliminary
A;Noteule type: DNA
A;Residues: 1-71 <SIM>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clacession: S44887
R; Du, Z.
Submitted to the EMBL Data Library, May 1993
A; Description: Sequence of the C. elegans cosmid ZK112.
A; Reference number: S44887
A; Reference number: S44887
A; Reference number: S44887
A; Reference number: S44887
A; Residue: Preliminary
A; Molecule type: DNA
A; Residues: 1-3343 < DUZ>
A; Cross-references: UNIPROT: P34616; UNIPARC: UPI000013BC7C; EMBL: L14324; NID: 9289740; PID:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Introns: 39/1; 74/3; 122/3; 209/2; 287/3; 333/2; 489/1; 611/2; 714/1; 939/3; 1002/2; 11 C;Reywords: cytoskeleton; transmembrane protein
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C;Species: Caenorhabditis elegans
C;Date: 14-Sep-1994 #sequence_revision 12-May-1995 #text_change 09-Jul-2004
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                                                                                     DB 1; Length 1409;
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    F;271-433/Product: proteinase #status predicted <MAT3>
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100.0%; Pred. No. 37;
tive 0; Mismatches
                                                                             1.8%; Score 8; DB 1
Local Similarity 100.0%; Pred. No. 16;
Les 8; Conservative 0; Mismatches
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Matches 8; Conserv
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Matches
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A; Moseidues: 1-391,1375-1409 cMIL>
A; Cross: 1-591,1375-1409 cMIL>
A; Cross-references: UNIPARC: UP1000002A70E; EMBL: X13719; NID: g7745; PIDN: CAA31997.1; PID:
R; Yoshioka, K.; Honma, H.; Zushi, M.; Kondo, S.; Togashi, S.; Miyake, T.; Shiba, T.
R; Yoshioka, K.; Honma, H.; Zushi, M.; Kondo, S.; Togashi, S.; Miyake, T.; Shiba, T.
R; Yoshioka, K.; Honma, H.; Zushi, M. Grondo, S.; Togashi, S.; Miyake, T.; Shiba, T.
A; Yittle: Virus-like particle formation of Drosophila copia through autocatalytic process
A; Reference number: S14835; MUID: 90151630; PMID: 1689241
C;Date: 23-Mar-1995 #sequence_revision 05-Apr-1995 #text_change 09-Jul-2004
C;Accession: A49397; A54962
R;Hua, X.; Yokoyama, C.; Wu, J.; Briggs, M.R.; Brown, M.S.; Goldstein, J.L.; Wang, X. Proc. Natl. Acad. Sci. U.S.A. 90, 11603-11607, 1993
A;Title: SRBP-2, a second basic-helix-loop-helix-leucine zipper protein that stimulates A;Reference number: A49397; MUID:94089681; PMID:7903453
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A,Reference number: A03324, MUID:85267679, PMID:2410772
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A;Residues: 1-391,1375-1409 <YOS>
A;Cross-references: UNIPARC:UPI000002A70E; EMBL:X54147; NID:g7749; PIDN:CAA38086.1; PID:
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A;Residues: 1-1409 <MOU>
A;Cross-references: UNIPROT:P04146; UNIPARC:UPI0000127EB3; GB:M11240; NID:g158615; PIDN:
                                                                                                                                                                                                                                                                                A;Molecule type: mRNA
A;Residues: 1-1141 <HUA>
A;Cross-references: UNIPROT:Q12772; UNIPARC:UPI000003269D; GB:U02031; NID:g451329; PIDN:
A;Experimental source: HeLa cells
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                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Note: sequence extracted from NCBI backbone (NCBIP:140987)
R;Yang, J.; Sato, R.; Goldstein, J.L.; Brown, M.S.
Renes Dev. 8, 1910-1919, 1994
A;Title: Sterol-resistant transcription in CHO cells caused by gene rearrangement that
A;Reference number: A54962; MUID:95047343; PMID:7958866
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A;Reference number: S03612; MUID:89183629; PMID:2538806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
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C;Superfamily: sterol regulatory element binding protein
C;Keywords: DNA binding; membrane protein; transcription factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1141;
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C;Superfamily: retrovirus-related polyprotein
C;Keywords: polyprotein; proteinse
Fs;2-433/Product: copia protein, 48K #status predicted <MAT1>
E;2-270/Product: copia protein, 31K #status predicted <MAT2>
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1.8%; Score 8; DB 2; 100.0%; Pred. No. 13; tive 0; Mismatches

Query Match 1.8 Best Local Similarity 100. Matches 8; Conservative

RESULT 12

A; Cross-references: GDB:273625

C;Genetics: A;Gene: GDB:SREBF2; SREBP2

A; Contents: annotation

R;Miller, K.; Rosenbaum, J.; Zbrzezna, V.; Pogo, A.O. Nucleic Acids Res. 17, 2134, 1989

A,Accession: A03324

Accession: S03612

Gene: FlyBase:copia Cross-references: FlyBase:FBgn0000349

A; Accession: S14835

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                                              Gaps
                                              ;
0
Query Match
1.6%; Score 7; DB 2; Length 71;
Best Local Similarity 100.0%; Pred. No. 12;
Matches 7; Conservative 0; Mismatches 0; Indels
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39 IKEFKKS 45

36 IKEFKKS 42 T10336

hypothetical protein 67 - Orgyla pseudotsugata nuclear polyhedrosis virus
C;Species: Orgyla pseudotsugata nuclear polyhedrosis virus, OphNPV
C;Species: lo-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 09-Jul-2004
C;Accession: T10336
R;Ahrens, C.A.; Russell, R.R.; Funk, C.J.; Evans, J.; Harwood, S.; Rohrmann, G.F.
Virology 229, 381-399, 1997
A;Title: The sequence of the Orgyla pseudotsugata multinucleocapsid nuclear polyhedrosis
A;Reference number: Z17011; MUID:97271300; PMID:9126251
A;Accession: T10336
A;Accession: T10336
A;Accession: preliminary; translated from GB/EMBL/DDBJ
A;Accession: J-79 <AHR>A;Melecule type: DNA
A;Residues: 1-79 <AHR>A;Cross-references: UNIPROT:010321; UNIPARC:UPI000006182F; EMBL:U75930; NID:g2934903; PI

Gaps ö 0; Indels Query Match
1.6%; Score 7; DB 2; Length 79;
Best Local Similarity 100.0%; Pred. No. 13;
Matches 7; Conservative 0; Mismatches 0; Indels

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ઠે g Search completed: August 11, 2006, 20:09:17 Job time : 22.9374 secs

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224 NKSEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK 276
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Best Local Similarity 100.0%; Pred. No. 5e-45;
Matches 53; Conservative 0; Mismatches 0; Indels
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042cf8 bacteriopha
042c18 bacteriopha
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080275 mus cervico
080278 mastcmys hu
080281 arvicola te
0802b5 mus platyth
0810y0 mus spicile
0824b6 mus spicile
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07p877 oryctolagus
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                                                                       August 11, 2006, 19:54:19 ; Search time 157.197 Seconds
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040272_MCSR_9CAUD
040278_9VURI
080275_MUSCE
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2 Q6HMV7 BACHK 2 Q81UK3 BACAN 2 Q71SUB MOUSE 2 Q6RSWF PIG 2 Q92329 PSEPU 2 Q92329 PSEPU 2 Q98K11 CCOREP 2 Q93339 PSELLD 2 Q38366 PSELLD 2 Q7Q403 ANOGA 2 Q38366 PSELLD 2 Q7VPA1 HELHP 2 Q7VPA1 HELHP 2 Q36UW3 MARHY 2 Q36UW3 MARHY 2 Q44EK1 CHRSL	ALIGNMENTS  NARY; PRT; 425 AA. d into UniProtKB/TrEMBL. version 1. sion 24.	Helicobacteria; Protebacteria; Bylonio.  Bacteria; Protebacteria; Epsilomproteobacteria; Campylobacterales Helicobacteria; Epsilomproteobacteria; Campylobacterales (MCBI TaxID=210;  NUSI TaxID=210;  NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].  STRAIN=26655 / ArC7 700392;  NUCLEOTIDE STORENCE [LARGE SCALE GENOMIC DNA].  STRAIN=26655 / ArC7 700392;  A PODD JF., White O., Kerlavage A.R., Clayton R.A., Sutton G.G., Fleischmann R.D., Kerlavage A.R., Clayton R.A., Sutton G.G., A Fleischmann R.D., Kerlavage A.R., Clayton R.J., Zhou L., Zhou L., Loftus B.B., Noftuney K., FitzGerald L.M., Lee N., Adams M.D., A Hickey E.K., Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D. Hickey E.K., Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D. A Hickey E.K., Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D. A Smith H.O., Fraser C.M., Venter J.C.;  Natthey L., Wallin B., Hayes W.S., Borodovsky M., Karp P.D., Smith H.O., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;  Natthey E.K., Fraser C.M., Venter J.C.;	1 1 0 1 1 1 1 1 1 1 1 1
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Length 425

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EMBL, AF194963; AAF35291.2; -; Genomic_DNA.

GO; GO:0016020; C:membrane; IEA.

GO; GO:0008417; F:fucosyltransferase activity; IEA.

GO; GO:0008477; F:transferase activity, transferring glycosyl. . .; IEA.

GO; GO:001677; F:transferase activity, transferring glycosyl. . .; IEA.

GO; GO:001686; P:procein amino acid glycosylation; IEA.

InterPro; IFR001503; Glyco_trans 10.

PANTHER; PTHR11929; Glyco_trans 10.

Glycosyltransferase; Transferase.

Glycosyltransferase; Transferase.

SEQUENCE 462'AA; 54560 MW; BD27F8B351ECE752 CRC64;
                                                                                                                                                               EMBL; AY450598; AAR88431.1; -; Genomic_DNA.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0016417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosylation; IEA.
InterPro; IPR001503; Glyco_trans_10.
PANTHER; PTHR11929; Glyco_trans_10; 1.
Glycosyltransferase; Transferase.
SEQUENCE 432 AA; 50503 MW; 69D3A32FBD2F12C9 CRC64;
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                                                                                                  Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms
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Expression of a Novel Helicobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Helicobacter pylori (Campylobacter pylori).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
                                                                                                                       Distributed under the Creative Commons Attribution-NoDerive License
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          223 EFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   227 BFLSQYKFNLCPENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK 276
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                                                                                                                                                                                                                                                                                                                                                                                                                     Length 432;
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Submitted (FEB-2003) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11.2%; Score 50; DB 2; L 100.0%; Pred. No. 6.6e-42;
                                                                                                                                                                                                                                                                                                                                                                                                                     Score 50; DB 2; Le
Pred. No. 6.2e-42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-OCT-2000, integrated into UniProtKB/TrEMBL. 01-JUN-2003, sequence version 2. 07-FEB-2006, entry version 17. Alpha-1,3/4-fucosyltransferase.
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100.0%; Pred. No. c...
0; Mismatches
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Glycobiology 15:1076-1083(2005).
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  "Molecular Cloning and Functional
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRELIMINARY;
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Best Local Similarity 100.
Matches 50; Conservative
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GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0004757; F:fucosyltransferase activity, transferring glycosyl. .; IEA.
GO; GO:0006486; P:protean amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco_trans_10.
InterPro; IPR001503; Glyco_trans_10; 1.
Complete proteome; Glycosyltransferase.
Complete proteome; Glycosyltransferase.
SEQUENCE 476 AA; S5927 WW; 32BFFDBBD36E1F74 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE=97394467; PubMed=9222185; DOI=10.1038/41483;
Tomb J.-F., White O., Karlavage A.R., Clayton R.A., Sutton G.G.,
Tomb J.-F., White O., Karlavage A.R., Clayton R.A., Sutton G.G.,
Peleischmann R.D., Ketchum K.A., Klenk H.-F., Gill S.R.,
Dougherty B.A., Nelson K.E., Quackenbush J., Zhou L., Kirkness E.F.,
Peterson S.N., Loftus B.J., Richardson D.L., Dodson R.J., Khalak H.G.,
Glodek A., McKenney K., PitzGerald L.M., Lee N., Adams M.D.,
Hickey B.K., Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D.,
Kelley J.M., Cotton M.D., Weidman J.F., Fujii C., Bowman C.,
Watthey L., Wallin E., Hayes W.S., Borodovsky M., Karp P.D.,
Smith H.O., Fraser C.M., Venter J.C.,
"The complete genome sequence of the gastric pathogen Helicobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
NCBI_TaxID=210;
                                                                                                                                                                                                                       Helicobarter pylori (Campylobacter pylori).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
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                                                                                                                                                                                                                                                                                                                                                 NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
STRAIN=26695 / ATCC 700392;
                                                                                                  01-JAN-1998, integrated into UniProtKB/TrEMBL. 01-JAN-1998, sequence version 1. 07-FBB-2006, entry version 25. 07-FBB-2006, entry version 25. OrderedLocusNames=HP0651; ORFNames=HP_0651;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              05-JUL-2004, integrated into UniProtKB/TrEMBL
05-JUL-2004, sequence version 1.
07-FEB-2006, entry version 8.
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PubMed=16000696; DOI=10.1093/glycob/cwj004;
Rabbani S., Miksa V., Wipf B., Ernst B.;
                                                          476 AA.
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QGST35;
                                                          PRT;
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NCBI_TaxID=210;
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                                                       PRELIMINARY;
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LinkHub; O25366; -.
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G9: G0: G10620; C: membrane; IEA.
G9: G0: 0016127; F: fucosyltransferase activity; IEA.
G9: G0: 0016177; F: fucosyltransferase activity, transferring glycosyl. . .; IEA.
G9: G0: 0016177; F: transferase activity, transferring glycosyl. . .; IEA.
G9: G0: 0016177; F: transferase activity, transferring glycosyl. . .; IEA.
G9: G0: 0016177; F: transferase activity, transferase.
G9: G0: 0016177; F: fucosyltransferase.
FAR-I1929; Glycosyltransferase; Transferase.
SEQUENCE 436 AA; 50699 MW; IDB2066AE98FA6IE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                    NUCLECTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
MEDLINE=99120557; PubMed=9923682; DOI=10.103816495;
Alm R.A., Ling L.-S.L., Moir D.T., King B.L., Brown B.D., Doig P.C.,
Smith D.R., Noonan B., Guild B.C., Galge B.L., Carmel G.,
Tummino P.J., Caruso A., Uria-Nickelsen M., Mills D.M., Ives C.,
Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.B., Vovis G.F.,
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Alm R.A., Ling L.-S.L., Moir D.T., King B.L., Brown B.D., Doig P.C., Smith D.R., Noonan B., Guild B.C., deJonge B.L., Carmel G., Tummino P.J., Caruso A., Uria-Nickelsen M., Mills D.M., Ives C., Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E., Vovis G.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                           Name-fucu; ORFNames-jhp 1002;
Helicobacter pylori J99 (Campylobacter pylori J99).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
                                                                                                                                                                                                                                                                                                                                                                                                                      "Genomic sequence comparison of two unrelated isolates of the human gastric pathogen Helicobacter pylori."; Nature 397:176-180(1999).
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01-MAY-1999, sequence version 1.
21-FBB-2006, entry version 23.
ALPHA (1,3)-FUCOSYLTRANSFERASE.
Name-fucT; ORFNames=jhp 0556;
Helicobacter pylori J99 (Campylobacter pylori J99).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Genomic sequence comparison of two unrelated isolates of the human gastric pathogen Helicobacter pylori.";
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                                                            01-MAY-1999, integrated into UniProtKB/TrEMB
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Q9ZLI3;
                     PRT;
                                                                              01-MAY-1999, sequence version 1.
21-FEB-2006, entry version 23.
ALPHA-(1,3)-FUCOSYLTRANSFERASE.
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NCBI_TaxID=85963;
                 Q9ZKD7_HELPJ PRELIMINARY;
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                                Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN=NCTC 11639;
MEDLINE=97407925; PubMed=9261149; DOI=10.1074/jbc.272.34.21357;
Ge Z., Chan N.W.C., Palcic M.M., Taylor D.E.;
"Cloning and heterologous expression of an alphal,3-fucosyltransferase gene from the gastric pathogen Helicobacter pylori.";
J. Biol. Chem. 272:21357-21363(1997).
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
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                                                                                   EMBL; AE001439; AAD06169.1; -; Genomic_DNA.
PIR; B71914; B71914.
BioCyc; HPYL85963:JHP0596-MONOMER; -.
GO; GO:0016020; C:membrane; IRA.
GO; GO:0016417; F:fucosyltransferase activity; IEA.
GO; GO:0006417; F:fucosyltransferase activity; IEA.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
Interpro; IPR01503; Glyco_trans_10.
PANTHER; PTHR11929; Glyco_trans_10.
EANTHER; PTHR11929; Glyco_trans_10.
COMPLET FORCEOME; Glycop_transferase; Transferase.
SEQUENCE 454 AA; 53448 MM; 3262687131263AB0 CRC64;
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GO; GO:0016020; C:membrane; IEA.

GO; GO:0008417; F:tucosyltransferase activity; IEA.

GO; GO:0016757; F:transferase activity, transferring glycosyl.

GO; GO:0016486; P:protein amino acid glycosylation; IEA.

InterPro; IPR011503; Glyco_trans 10.

PANTHER; PTHR1929; Glyco_trans 10.

Glycosyltransferase: Transferase.

SEQUENCE 478 AA; 56070 MW; ACD47A9C7D2D3266 CRC64;
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                                                                                                                                                                                                                                                                                                               Length 454;
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                                                                                                                                                                                                                                                                                                               DB 2; Le 8.4e-38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9.6%; Score 43; DB 2; Lv
100.0%; Pred. No. 1.1e-34;
ative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-JAN-1998, integrated into UniProtKB/TrEMBL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     478 AA
                                                                                                                                                                                                                                                                                                               10.3%; Score 46; DB 100.0%; Pred. No. 8.4 tive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-JAN-1998, sequence version 1. 07-FEB-2006, entry version 26. Alphal, 3-fucosyltransferase.
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Nature 397:176-180(1999).
                                                                                                                                                                                                                                                                                                                                                     46; Conservative
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Best Local Similarity
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TD 032631 HELPY
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Distributed under the Creative Commons Attribution-NoDerivs License
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Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi;
Muroidea; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-22503854; PubMed=12615004; DOI=10.1016/S0168-9525(03)00021-0; Montoya-Burgos J.I., Boursot P., Galtier N.; "Recombination explains isochores in mammalian genomes.";
                                                                                                                                                                                                                        Bacteriophage 42e.
Viruses; dsDNA viruses, no RNA stage; Caudovirales; Siphoviridae.
                                                                                                                                                                                                                                                                                                                                  PubMed=15788529; DOI=10.1073/pnas.0501140102;
Kwan T., Liu J., Dubow M., Gros P., Pelletier J.;
"The complete genomes and protecomes of 27 Staphylococcus aureus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; AY954955; AAX91190.1; -; Genomic DNA.
SEQUENCE 34 AA; 4006 MW; 263AB27910DE2E16 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                        bacteriophages.";
Proc. Natl. Acad. Sci. U.S.A. 102:5174-5179(2005).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JUN-2003, integrated into UniProtKB/TrEMBL. 01-JUN-2003, sequence version 1. 07-FEB-2006, entry version 12. Fxy protein (Fragment).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2.0%; Score 9; DB 2;
100.0%; Pred. No. 0.96;
ative 0; Mismatches
                                                                                                                               07-JUN-2005, integrated into UniProtKB/TrEMBL. 07-JUN-2005, sequence version 1. 07-FEB-2006, entry version 3.
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InterPro; IPR003879; Butyrophylin.
InterPro; IPR003877; SPRY_ropt.
Pfam; PF00622; SPRY; 1.
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SEQUENCE 94 AA; 10617 MW;
                                                                                        PRELIMINARY;
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Best Local Similarity 100..
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                                                                                   Q4zcue_9caup
Q4zcue;
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GO; GO:0016020; C:membrane; IRA.
GO; GO:0008417; F:tucosyltransferase activity; IRA.
GO; GO:0016757; F:tucansferase activity, transferring glycosyl. .; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. .; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. .; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. .; IEA.
GO; GO:0016759; Glyco_trans 10.
FPANTHER; PTHR11929; Glyco_trans 10.
Glycosyltransferase; Transferase.
SEQUENCE 333 AA; 39154 MW; CFFCBIAC127E0A8C CRC64;
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                                                                                                                                                                                                                                                                                                                                            Lewis X biosynthesis in Helicobacter pylori. Molecular cloning of an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
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                                                                                                 Helicobacter pylori (Campylobacter pylori).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
NCBI_TaxID=210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteriophage 47.
Viruses; dsDNA viruses, no RNA stage; Caudovirales; Siphoviridae.
NCBI_TaxID=320839;
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PubMed=15788529; DOI=10.1073/pnas.0501140102;
Kwan T., Liu J., Dubow M., Gros P., Pelletier J.;
"The complete genomes and proteomes of 27 Staphylococcus aureus
                                                                                                                                                                                                                                               STRAIN=NCTC 11637;
MEDLINE=97407924; PubMed=9261148; DOI=10.1074/jbc.272.34.21349;
Martin S.L., Edbrooke M.R., Hodgman T.C., van den Eijnden D.H.,
Bird M.I.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
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6.5%; Score 29; DB 2; Length 333;
Best Local Similarity 100.0%; Pred. No. 1.9e-20;
Matches 29; Conservative 0; Mismatches 0; Indels
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SEQUENCE 34 AA; 3962 MW; 348D427904DF6E16 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 bacteriophages.";
Proc. Natl. Acad. Sci. U.S.A. 102:5174-5179(2005).
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01-JAN-1998, integrated into UniProtKB/TrEMBL. 01-JAN-1998, sequence version 1. 07-FEB-2006, entry version 23. Alpha-(1,3)-fucosyltransferase (EC 2.4.1.-). Name=fucT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               34 AA.
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                                                                                                                                                                                                                                                                                                                                                              alpha(1,3)-fucosyltransferase gene.";
J. Biol. Chem. 272:21349-21356(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q4ZCF8_9CAUD PRELIMINARY; PRT;
Q4ZCF8;
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nes 9; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Arvicola terrestris (Buropean water vole).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Buarchontcollires; Glires; Rodentia; Sciurognathi;
Muroidea; Cricetidae; Arvicolinae; Arvicola.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=22503854; PubMed=12615004; DOI=10.1016/S0168-9525(03)00021-0; Montcya-Burgos J.I., Boursot P., Galtier N.; Recombination explains isochores in mammalian genomes."; Trends Genet. 19:128-130(2003).
                                                                                                                                                                                                                                   0; Indels
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SEQUENCE 94 AA, 10617 MW, 1485630849C1B84F CRC64;
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100.0%; Pred. No. 2.4;
tive 0; Mismatches
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100.0%; Pred. No. 2.4;
tive 0; Mismatches
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InterPro; IPR01870; B302.
InterPro; IPR003879; Butyrophylin.
InterPro; IPR003877; SPRY_ropt.
Pfam; PF00622; SPRY; 1.
PRINTS; PR01407; BUTYPHINCDUF.
                                              EMBL; AY181225; AAO62985.1; -; Genomic_DNA
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                                                           InterPro; IPR001870; B302.
InterPro; IPR003879; Butyrophylin.
InterPro; IPR003877; SPRY_rcpt.
Pfam; PF00622; SPRY; 1.
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Best Local Similarity 100...
Best Local 9; Conservative
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Q80281;
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Q80ZB5_MUSPL
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Q80Z81_ARV
   SSSEREEREFFS
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Mammalia; Butheria; Buarchontoglires; Glires; Rodentia; Sciurognathi;
Muroidea; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                          STRAIN=CRTC;
MEDLINE=22503854; PubMed=12615004; DOI=10.1016/S0168-9525(03)00021-0;
MEDLINE=22503854; PubMed=12615004; DOI=10.1016/S0168-9525(03)00021-0;
MONCHOYA-BUTGOS J.I., Boursot P., Galtier N.;
"Recombination explains isochores in mammalian genomes.";
Trends Genet. 19:128-130(2003).
                 Gaps
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Mammalia; Eutheria; Euarchontoglires; Glires; Rodentia; Sciurognathi;
Muroidea; Muridae; Murinae; Mastomys.
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100.0%; Pred. No. 2.4;
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                                                                                                                                                                                                                                                                 Mus cervicolor (Fawn-colored mouse).
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Interpro; IPR003879; Butyrophylin.
Interpro; IPR003877; SPRY_rcpt.
Pfam; PF00622; SPRY; 1.
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SEQUENCE 94 AA; 10617 MW:
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Mus platythrix (Flat-haired mouse).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Buarchontoglires, Glires, Rodentia, Sciurognathi,
Muroidea, Muridae, Murinae, Mus.
                                                                                                 STRAIN=PTX;
MEDLINE=22503854; PubMed=12615004; DOI=10.1016/S0168-9525 (03) 00021-0;
MONICOY=BURGOD J.I., Boursot P., Galtier N.;
"Recombination explains isochores in mammalian genomes.";
Trends Genet. 19:128-130(2003).
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; Sequence 2	z, Apr	olicat 2227	z, Application US/U9U9Z31	20	22.	315					
GENERAL INFORMATION:	NFORM	TION:	••								
, APPLICANT:	T: Ta	lor,	Diane	Э.							
, APPLICANT:	∏: Ge,	Zhor	Zhongming	,			. !				
; TITLE OF INVENTION:	INVE	NOIL	ON: ALPHA-1,	-15		COSYLT	3-FUCOSYLTRANFERASE				
; FILE REFERENCE: 0/234/04300.	APPT.TC	ATTON	A NITMBE		)/811	US/09/092.31	15				
CURRENT	FILING	DATE	FILING DATE: 1998-06-05		-05						
		ATION	APPLICATION NUMBER:		us e	60/048,8	57				
; EARLIER	FILING DATE:	3 DATE	E: 1997-06-06	-06	90-						
, NUMBER OF SEQ ID NOS:	P SEO	ID NC	OS: 22								
; SOFTWARE:	1	FastSEQ f	for Windows	dow		Version 3	0.				
SEQ ID NO											
LENGIH	1: 486										
. OPCANISM: Helicobacter	M. Hel	i i coba		nvlori	Ţ						
US-09-092-315	15-2			2	:						
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; Sequence	2, App	olicat	Application US/09733524A	60/	7335	524A					
, Patent No.	w	1298									
, GENERAL 1	INFORMATION:	ATION:									

GENERAL INPORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: G. Zhongming
TITLE OF INVENTION: EVERRESING THEM (amended)
TITLE OF INVENTION: EVERRESING THEM (amended)
FILE OF INVENTION: EVERRESING THEM (amended)
FILE OF INVENTION: EVERRESING THEM (amended)
FILE OF INVENTION: EVERRESING THEM (amended)
FILE OF INVENTION: EVERRESING THEM (amended)
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FILE OF INVENTION: EVERRESING THEM (amended)
FILE OF INVENTION: EVERRESING THEM (amended)
FRICK REPLICATION NUMBER: US 90/992,315
PRIOR FILING DATE: 1998-06-05
FRICK FILING DATE: 1998-06-05
FRICK FILING DATE: 1998-06-05
NUMBER OF SEQ. ID NOS: 27
SOFTWARE: PASKED EVERTION OF SET OF WINDOWS VERSION 4.0

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APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: WUCCSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REPERENCE: 0724-049002
CURRENT APPLICATION NUMBER: US/09/73,524
FRIOR APPLICATION NUMBER: US/09/73,524
FRIOR APPLICATION NUMBER: US/09/733,524
FRIOR PLILING DATE: 2000-12-07
FRIOR PLILING DATE: 1998-06-05
FRIOR PLILING DATE: 1998-06-05
FRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 2
LENGTH: 486
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13.2%; Score 59; DB 2; Length 486;
Best Local Similarity 100.0%; Pred. No. 4.6e-48;
Matches 59; Conservative 0; Mismatches 0; Indels
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APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: Ge, Zhongmin G.
APPLICANT: University of Alberta
TITLE OF INVENTION: Alpha-1,3 Fucosyltransferase
FILE REPERENCE: 017398-000420US
CURRENT APPLICATION NUMBER: US/10/129,2,098A
CURRENT FILING DATE: 2002-04-09
FRIOR APPLICATION NUMBER: US/10/120,319
FRIOR APPLICATION NUMBER: US 06/048,857
FRIOR PILING DATE: 1997-06-06
FRIOR FILING DATE: 1997-06-05
FRIOR FILING DATE: 1998-06-05
FRIOR PILING DATE: 2000-12-07
FRIOR PILING DATE: 2000-12-07
FRIOR PILING DATE: 2000-12-07
FRIOR PILING DATE: 2000-12-07
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Patent No. 7029891
; SEQ ID NO 2
; LENGTH: 486
; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-09-733-524A-2
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GENERAL INFORMATION:
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
CURRENT PELING DATE: 2000-12-07
CURRENT PILING DATE: 1998-06-05
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PRIOR APPLICATION NUMBER: US 60/048,857
NUMBER OF SEQ ID NOS: 27
SOCTOR FLING DATE: 1997-06-06
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                                                                                                                                                                                                              ; OTHER INFORMATION: H. pylori strain UA1182
; OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
US-10-392-098A-2
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APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
ITTLE OF INVENTION: ALFHA-1, 3-FUCOSYLTRANFERASE
ITTLE OF INVENTION: ALFHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US 60/048,857
EARLIER APPLICATION NUMBER: US 60/048,857
EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOPTWARE: FastSEQ for Windows Version 3.0
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ilarity 100.0%; Pred. No. 2.3e-42;
Conservative 0; Mismatches 0;
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13.2%; Score 59; DB 3; Le
Best Local Similarity 100.0%; Pred. No. 4.6e-48;
Matches 59; Conservative 0; Mismatches 0;
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; ORGANISM: Helicobacter pylori
US-09-733-524A-6
                                        LENGTH: 486
TYPE: PRT
ORGANISM: Helicobacter pylori
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ORGANISM: Helicobacter pylori
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Best Local Similarity
Matches 53; Conserv
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SEQ ID NO 2
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OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
                                                                                  Query Match 11.9%; Score 53; DB 3; Lo
Best Local Similarity 100.0%; Pred. No. 2.3e-42;
Matches 53; Conservative 0; Mismatches 0;
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              ; US-10-392-098A-6
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  11.9%; Score 53; DB 2; Length 425; 100.0%; Pred. No. 2.3e-42; tive 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                                                                           Patent No. 6962806
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/10/189,977A
CURRENT FILING DATE: 2002-03-07
PRIOR APPLICATION NUMBER: US/09/733,524
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR APPLICATION NUMBER: US 09/092,315
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PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR SEQUENCE: 1998-06-05
NUMBER OF SEQUENCE: 27
SOFTWARE: PASTSEQ FOR WINDOWS VERSION 4.0
SEQUENCE: APPLICATION OF
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GENERAL INFORMATION:

APPLICANT: Ge, Zhongming
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: Alpha-1,3 Fucosyltransferase
TITLE OF INVENTION: Alpha-1,3 Fucosyltransferase
TITLE OF INVENTION: Alpha-1,3 Fucosyltransferase
CURRENT FILING DATE: 2003-03-17
FRICH PILING DATE: 2002-04-09
FRICH FILING DATE: 1997-06-06
FRICH FILING DATE: 1997-06-05
FRICH FILING DATE: 1997-06-05
FRICH FILING DATE: 1997-06-05
FRICH FILING DATE: 1998-06-05
FRICH FILING DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SOCTWARE: PatentIn Ver: 2.1
FEMALEL 425
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                                                                                                                                                                                                                                                                                                          Sequence 6, Application US/10189977A Patent No. 6962806
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GENERAL INFORMATION:
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ORGANISM: Helicobacter pylori
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ORGANISM: Helicobacter pylori
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Matches 53; Conserva
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GENERAL INCRMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: NUCLETC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: USA/09/02
CURRENT APPLICATION NUMBER: US/09/733,524A
CURRENT PILING DATE: 1908-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
SSEQ ID NO 5
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Best Local Similarity 100.0%; Pred. No. 2.6e-42;
Matches 53; Conservative 0; Mismatches 0; Indels
                                                                                                                                           APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongwing
TITLE OF INVENTION: A.D.FHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/04901
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1998-06-05
RAALIER APPLICATION NUMBER: US 60/048,857
EARLIER PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FRSESQ for Windows Version 3.0
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11.9%; Score 53; DB 2; Le
Best Local Similarity 100.0%; Pred. No. 2.6e-42;
Matches 53; Conservative 0; Mismatches 0;
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; Sequence 5, Application US/09733524A
; Patent No. 6534298
RESULT 9
US-09-092-315-5
; Sequence 5, Application US/09092315
; Patent No. 6399337
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GENERAL INFORMATION:
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GENERAL INFORMATION:

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3

TITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REFERENCE: 07254-049002

FILE REFERENCE: 07254-049002

CURRENT APPLICATION NUMBER: US/10/189,977A

CURRENT APPLICATION NUMBER: US/09/733,524

PRIOR PILING DATE: 2000-12-07

PRIOR PILING DATE: 1998-06-05

PRIOR FILING DATE: 1998-06-05

PRIOR FILING DATE: 1999-06-05

NUMBER OF SEQ ID NOS: 27

NUMBER OF SEQ ID NOS: 27

SOFFWARE: FASTSEQ for Windows Version 4.0
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225 NKSEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK 277
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) OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpPucT)

US-10-392-098A-5
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: University of Alberta
APPLICANT: University of Alberta
TITLE OF INVENTION: Alpha-1, 3 Fucosyltransferase;
FILE REPERENCE: 017398-000420US
CURRENT APPLICATION NUMBER: US/10/392,098A
CURRENT FILING DATE: 2003-03-17
PRIOR PILING DATE: 2002-04-09
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR FILING DATE: 1997-06-06
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1098-06-05
PRIOR FILING DATE: 1098-06-05
PRIOR FILING DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SSOFTWARE: PATENTIN VET: 2.1
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                                                                                                                  Sequence 5, Application US/10189977A
Patent No. 6962806
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ORGANISM: Helicobacter pylori
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Best Local Similarity 100.C
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Best Local Similarity
Matches 53; Conserv
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LENGTH: 476
TYPE: PRT
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US-10-189-977A-5
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LENGTH: 476
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224 NKSEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK 276
                            225 NKSEFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK 277.
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Best Local Similarity 100.0%; Pred. No. 8e-33;
Matches 43; Conservative 0; Mismatches 0; Indels
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongmaing
TITLE OF INVENTION: ALFHA-1, 3-FUCOSYLTRANFERASE;
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1998-06-05
EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FASTESQ for Windows Version 3.0
SEQ ID NO 1
                                                                                                                                                                                                                                                                  APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongwing
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/04901
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1998-06-05
EARLIER APPLICATION NUMBER: US 60/048,857
EARLIER PILING DATE: 1997-06-06
SARING PEO ID NOS: 22
SOFTWARE: FRAESEQ FOR Windows Version 3.0
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9.6%; Score 43; DB 2; Lk
Best Local Similarity 100.0%; Pred. No. 9.6e-33;
Matches 43; Conservative 0; Mismatches 0;
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Patent No. 6554298
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
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; Sequence 13, Application US/09092315
; Patent No. 6399337
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Patent No. 6399337
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; ORGANISM: Helicobacter pylori
US-09-092-315-1
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, ORGANISM: Helicobacter pylori
US-09-092-315-13
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; TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
; TITLE OF INVENTION: FUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
; TITLE OF INVENTION: EXPRESSING THEM (amended)
; TITLE OF INVENTION: EXPRESSING THEM (amended)
; TITLE OF INVENTION: EXPRESSING THEM (amended)
; TITLE OF INVENTION NUMBER: US/09/733,524A
; CURRENT APPLICATION NUMBER: US 09/092,315
; PRIOR APPLICATION NUMBER: US 09/092,315
; PRIOR PLILING DATE: 1988-06-05
; PRIOR PLILING DATE: 1989-06-06
; PRIOR PLILING DATE: 1997-06-06
; NUMBER OF SEQ ID NOS: 27
; SOFTWARE: PASISEQ for Windows Version 4.0
; SEQ ID NO 1
; LENGTH: 464
; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-09-733-524A-1
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9.6%; Score 43; DB 2; Length 464;
Best Local Similarity 100.0%; Pred. No. 9.6e-33;
Matches 43; Conservative 0; Mismatches 0; Indels
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Search completed: August 11, 2006, 20:10:51 Job time : 31.9076 secs

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Matches 446; Conservative
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Publication No. US20050164338A1
GENERAL INFORMATION:
APPLICANT: Simala-Grant, Joanne
APPLICANT: Taylor, Diane
APPLICANT: Taylor, Diane
APPLICANT: Dezila, Daniel James
APPLICANT: Neose Technologies, Inc.
APPLICANT: Recent Daniel James
APPLICANT: Neose Technologies, Inc.
APPLICANT: Governors of the University of Alberta
ITLE OP INVENTION: H. Pylori Fucosyltransferases
FILE REFERENCE: 019957-019400US
CURRENT APPLICATION NUMBER: US/10/764,212
CURRENT FILING DATE: 2004-01-22
NUMBER OP SEQ ID NOS: 81
SOFTWARE: PatentIn Ver. 2.1
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US-10-335-977-8558

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US-10-764-212-61

US-10-120-319-13

US-10-120-319-1

US-10-189-977-1

US-10-392-098-1

US-10-392-098-1

US-10-392-098-1

US-10-392-098-1

US-10-392-098-1

US-10-189-977-7

US-09-733-524-18

US-09-733-524-18

US-10-189-977-8

US-10-189-977-8

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US-10-189-977-8

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100.0%; Pred. No. 0;
iive 0; Mismatches
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301 PNAYLDMLYENPLNALDGKAYFYQDLSFKKILAFFKTILENDTIYHKSSTSFMWECDLDE 360
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APPLICANT: Taylor, Diane
APPLICANT: Taylor, Diane
APPLICANT: Johnson, Karl F.
APPLICANT: Bezila, Daniel James
APPLICANT: Bezila, Daniel James
APPLICANT: Governors of the University of Alberta
TITLE OF INVERTION: H. Pylori Fucosyltransferases
FILE REFERENCE: 019957-019400US
CURRENT APPLICATION UNDER: US/10/764,212
CURRENT FILING DATE: 2004-01-22
NUMBER OF SEQ ID NOS: 81
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APPLICANT: Johnson, Karl F.
APPLICANT: Bezila. Daniel James
APPLICANT: Neose Technologies, Inc.
APPLICANT: Governors of the University of Alberta
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Publication No. US20050164338A1
GENERAL INFORMATION:
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Publication No. US20050164338A1
GENERAL INFORMATION:
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TYPE: PRT
ORGANISM: Helicobacter pylori
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US-10-764-212-70
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LENGTH: 247
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; OTHER INFORMATION: H. pylori strain 19C2 FutB fucosyltransferase; OTHER INFORMATION: catalytic domain conserved region positions 22-277 US-10-764-212-70
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APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REPERRICE: 07254/04901
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT FILING DATE: 2002-04-09
PRIOR PILING DATE: EARLIER PLILING DATE: 1998-06-05
PRIOR PLING DATE: EARLIER FILING DATE: 1998-06-05
PRIOR PLING DATE: EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FASTERE FILING DATE: 1997-06-06
SEQ ID NOS: 22
SOFTWARE: FASTERE FILING DATE: 1997-06-06
SEQ ID NOS: 22
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APPLICANT: Taylor, Diane
APPLICANT: Taylor, Marl F.
APPLICANT: Johnson, Karl F.
APPLICANT: Bearla, Daniel James
APPLICANT: Bose Technologies, Inc.
APPLICANT: Governors of the University of Alberta
TITLE OF INVENTION: H. Pylori Fucosyltransferases
FILE REPERENCE: 019957-019400US
CURRENT APPLICATION NUMBER: US/10/764,212
CURRENT FILING DATE: 2004-01-22
NUMBER OF SEC ID NOS: 81
SOFTWARE: Patentin Ver. 2.1
                                                                                                         Query Match
15.2%; Score 68; DB 5; Le
Best Local Similarity 100.0%; Pred. No. 2.7e-57;
Matches 68; Conservative 0; Mismatches 0;
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15.2%; Score 68; DB 5; L4
Best Local Similarity 100.0%; Pred. No. 2.9e-57;
Matches 68; Conservative 0; Mismatches 0;
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Publication No. US20020164749A1
GENERAL INFORMATION:
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Publication No. US20050164338A1
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: Helicobacter pylori
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TYPE: PRT
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US-10-764-212-8
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US-10-764-212-72
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LENGTH: 486
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Query Match
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APPLICANT: 187-01. Under E.
APPLICANT: 187-01. Under E.
APPLICANT: 18, Zhongming
TITLE OF INVENTION: FUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: WUMBER: 10510/392,098
FILE REFERENCE: 07254-049002
CURRENT PELLING DATE: 2003-03-17
PRIOR APPLICATION NUMBER: US/09/733,524A
PRIOR APPLICATION NUMBER: US/09/733,524A
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-06
NUMBER: OF SEQ ID NOS: 27
SOFTWARE: FRASESO for Windows Version 4.0
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                                                                                                              Query Match 13.2%; Score 59; DB 4; Length 486; Best Local Similarity 100.0%; Pred. No. 2.8e-48; Matches 59; Conservative 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                                                                                                              Publication US/10189977
Publication No. US20030166211A1
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TILE OF INVENTION: ALFHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/10/189,977
CURRENT FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR PELING DATE: 1999-06-05
PRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 2
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                     ; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-10-120-319-2
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; ORGANISM: Helicobacter pylori
US-10-189-977-2
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ORGANISM: Helicobacter pylori
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Matches 59; Conserv
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LENGTH: 486
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                                                                                                                                                     400 DDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYERLLONASPLIELSONT 458
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; OTHER INFORMATION: H. pylori strain 1182 FutB fucosyltransferase US-10-764-212-2
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APPLICANT: Johnson, Karl F.
APPLICANT: Bochnson, Karl F.
APPLICANT: Borila, Daniel James
APPLICANT: Governors of the University of Alberta
TITLE OF INVENTION: H. Pylori Pucosyltransferases
FILE REPRENCE: 019957-019400US
CURRENT APPLICATION NUMBER: US/10/764,212
CURRENT FILING DATE: 2004-01-22
NUMBER OF SEQ ID NOS: 81
SOFTWARE: Patentin Ver. 2.1
13.2%; Score 59; DB 4; Le
100.0%; Pred. No. 2.8e-48;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT: Johnson, Karl F.
APPLICANT: Bezila, Daniel James
APPLICANT: Neose Technologies, Inc.
APPLICANT: Governors of the University of Alberta
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Publication No. US20050164338A1
                                                                                                                                                                                                                                                                                                                                Sequence 2, Application US/10764212
Publication No. US20050164338A1
                                                                                                                                                                                                                                                                                                                                                                                       GENERAL INFORMATION: APPLICANT: Simala-Grant, Joanne
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Publication No. US20050164338A1
GENERAL INFORMATION:
APPLICANT: Simala-Grant, Joanne
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ORGANISM: Helicobacter pylori
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                                                             59; Conservative
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SOFTWARE: PatentIn Ver. 2.1
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                              Best Local Similarity
Matches 59; Conserv
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US-09-733-524-16
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OTHER INFORMATION: catalytic domain conserved region positions 27-417
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
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                     72 NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYY 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73 NPLGSARKILSYQNAKRVFYTGENEVPNFNLFDYAIGFDELDFRDRYLRMPLYY 126
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; OTHER INFORMATION: H. pylori strain 1111 FutA fucosyltransferase
US-10-764-212-4
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100.0%; Pred. No. 1.7e-43;
tive 0; Mismatches 0; Indels
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APPLICANT: Johnson, Karl F.
APPLICANT: Bezila, Daniel James
APPLICANT: Bezila, Daniel James
APPLICANT: Bose Technologies, Inc.
APPLICANT: Governors of the University of Alberta
TITLE OF INVENTION: H. Pylori Fucosyltransferases
FILE REPERBURE: 019957-019400US
CURRENT APPLICATION NUMBER: US/10/764,212
CURRENT FILING DATE: 2004-01-22
NUMBER OF SEQ ID NOS: 81
SOFTWARE: Patent In Ver. 2.1
                                                                                                                                                                                                                                       APPLICANT: Taylor, Diane
APPLICANT: Taylor, Diane
APPLICANT: Johnson, Karl F.
APPLICANT: Bezila, Daniel James
APPLICANT: Bezila, Daniel James
APPLICANT: Governors of the University of Alberta
TITLE OF INVENTION: H. Pylori Fucosyltransferases
FILE REFERENCE: 019957-019400US
CURRENT PELING DATE: 2004-01-22
NUMBER OF SEQ ID NOS: 81
                                                                                                                                                       Sequence 66, Application US/10764212
Publication No. US20050164338A1
GENERAL INFORMATION:
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Publication No. US20050164338A1
GENERAL INFORMATION:
APPLICANT: Simala-Grant, Joanne
                                                                                                                                                                                                                                  APPLICANT: Simala-Grant, Joanne
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ORGANISM: Helicobacter pylori
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SEQ ID NO 66
LENGTH: 391
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Matches 54; Conservative
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LENGTH: 432
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APPLICANT: The Governers of the University of Alberta, a Canada Corporation APPLICANT: Taylor, Diane E. APPLICANT: Taylor, Diane E. APPLICANT: Taylor, Diane E. APPLICANT: Ge, Zhongming TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3 TITLE OF INVENTION: FUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND TITLE OF INVENTION: EXPRESSING THEM FILLE REPERENCE: 07254/049002 CURRENT APPLICATION NUMBER: US/09/733,524 CURRENT PILING DATE: 2000-12-14 PRIOR FILING DATE: 1990-06-05 PRIOR FILING DATE: 1997-06-06 PRIOR FILING DATE: 1997-06-06
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Sequence 6, Application US/10120319;
Publication No. US20020164749A1
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT FILING DATE: 2002-04-09
FRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/092,315
FRIOR FILING DATE: EARLIER FILING DATE: 1998-06-05
FRIOR FILING DATE: EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FASESEQ for Windows Version 3.0
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Best Local Similarity 100.0%; Pred. No. 1.7e-4
Matches 53; Conservative 0; Mismatches
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100.0%; Pred. No. 1.7e-4
tive 0; Mismatches
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SOPTWARE: PastSEQ for Windows Version 4.0
Sequence 16, Application US/09733524
Patent No. US20020068347A1
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LOCATION: (0)...(0)
OTHER INFORMATION: Strain 26695B
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Matches 53; Conservative
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Sequence 6, Application US/10392098

Sequence 6, Application US/10392098

Publication No. US20030166212A1

GENERAL INFORMATION:

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Ge, Zhongming

TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION WHERE: US/09/13,524A

PRIOR APPLICATION NUMBER: US/09/73,524A

PRIOR APPLICATION NUMBER: US 09/092,315

PRIOR PELING DATE: 1998-06-05

PRIOR PILING DATE: 1998-06-05

PRIOR PILING DATE: US 09/048,857

PRIOR PILING DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 27

SEQ ID NO 6

LENTH: ASS

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                   Sequence 6, Application US/10189977
Publication No. US20030166211A1
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: ALFRA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/09/092,315
FRICR PILING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: US/09/092,315
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
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ORGANISM: Helicobacter pylori
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Search completed: August 11, 2006, 20:16:20 Job time : 108.678 secs

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Matches 9; Conservative
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Sequence 250, App
Sequence 24876, A
Sequence 24875, A
Sequence 3784, Ap
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Sequence 34075, A
Sequence 34075, A
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1771.230 Million cell updates/sec
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5: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
6: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
7: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US11_NEW_PUB.pep:*
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US-11-056-355B-30485

US-11-056-355B-30485

US-11-056-355B-105984

US-11-056-355B-117605

US-11-056-355B-117605

US-11-056-355B-117605

US-11-056-355B-106365

US-11-056-355B-106365

US-11-056-355B-106365

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US-11-056-355B-17428

US-11-056-355B-17428

US-11-056-355B-17429

US-11-056-355B-873

US-11-056-355B-8708

US-11-056-355B-8572

US-11-056-355B-8572

US-11-056-355B-69280

US-10-953-349-31461

US-11-056-355B-69279

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US-11-056-355B-69279

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US-11-056-355B-69279
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#### **ALIGNMENTS**

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Sequence 250, Application US/11289102

Publication No. US20060121511A1

GENERAL INFORMATION:

APPLICANT: Lee, Hyerim

APPLICANT: Clark, Edwin

TITLE OF INVENTION:

TITLE OF INVENTION: MICROTUBULE-STABILIZING AGENTS

TITLE OF INVENTION: MICROTUBULE-STABILIZING AGENTS

FILE REFERENCE: 10318 MP

CURRENT PLILING DATE: 2005-11-29

CURRENT PLILING DATE: 2006-11-30

NUMBER OF SEQ ID NOS: 395

SOFTWARE: PATENTION 13.3

SEQ ID NO 250

LENGTH: 667
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Sequence 98, Application US/10471571A

Publication No. US20060115490A1

GENERAL INFORMATION:
APPLICANT: CHIRON SpA

TITLE OF INVENTION: STAPHYLOCOCCUS AUREUS PROTEINS AND NUCLEIC ACIDS
TITLE OF INVENTION STAPHYLOCOCCUS AUREUS PROTEINS AND NUCLEIC ACIDS
TITLE OF INVENTION: STAPHYLOCOCCUS AUREUS PROTEINS AND NUCLEIC ACIDS
CURRENT PILING DATE: 2001-03-09-12
PRIOR PILING DATE: 2001-03-27
NUMBER OF SEQ ID NOS: 5642
SOFTWARE: SeqWin99, version 1.03
SEQ ID NO 98
LINGTH: 34
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0; Indels
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100.0%; Pred. No. 0.0
tive 0; Mismatches
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APPLICANT: ALEXANDROV, Nickolai et al.
TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
TITLE OF INVENTION: ENCONDED THERBY
FITLE OF INVENTION: ENCONDED THERBY
FILE REFERENCE: 2750-1579PUS2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: PATENTIN VETSION 3.3
SEQ ID NO 6784
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Publication No. US20060150283A1

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Brover, Vyacheslav

APPLICANT: Alexandrov, Mickolai

TITLE OF.INVENTION: Sequence Determined DNA Fragments and Corresponding

TITLE OF.INVENTION: Sequence Determined DNA Fragments and Corresponding

TITLE OF.INVENTION: Sequence Determined DNA Fragments and Corresponding

TITLE OF.INVENTION: Sequence Determined DNA Fragments

TITLE OF.INVENTION: Sequence Determined DNA Fragments

CURRENT APPLICATION NUMBER: US/11/056,355B

CURRENT FILING DATE: 2005-02-14

PRIOR APPLICATION NUMBER: 60/544,190

PRIOR FILING DATE: 2004-02-13

NUMBER OF SEQ ID NOS: 119966

SEQ ID NO 30485
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APPLICANT: Brover, Vyacheelav
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REFERENCE: 2750-1590PUS2
CURRENT APPLICATION NUMBER: US/11/056,355B
CURRENT PILING DATE: 2005-02-14
PRIOR FILING DATE: 2006-02-13
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LOCATION: (1)..(161)

OTHER INFORMATION: Ceres Seq. ID no. 13497623

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; Publication No. US20060150283A1
; GENERAL INFORMATION:
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ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                         ; ORGANISM: Arabidopsis thaliana
US-10-953-349-6784
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Matches 7; Conservative
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US-10-953-349-24876

Sequence 24876, Application US/10953349

Publication No. US20060107345A1

GENERAL INFORMATION:

APPLICANT: ALEXANDROV, Nickolai et al.

APPLICANT: ALEXANDROV, Nickolai et al.

APPLICANT: ALEXANDROV, Nickolai et al.

TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES

TITLE OF INVENTION: ENCONDED THERBY

FILE REFERENCE: 2750-1579PUS2

CURRENT APPLICATION UNMERE: US/10/953,349

CURRENT APPLICATION UNMERE: 2004-09-30

NUMBER OF SEQ ID NOS: 40252

SOFTWARE: Patentin version 3.3

SEQ ID NO 24876
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FILE REFERENCE: 2750-157999US2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: Patentin version 3.3
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                                                                                             Length 667;
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                                                                                                DB 7;
                                                                                             Query Match 2.0%; Score 9; DB 7;
Best Local Similarity 100.0%; Pred. No. 1.1;
Matches 9; Conservative 0; Mismatches
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Publication No. US20060107345A1
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                                                                                                                                                                                              197 AFYDALNSI 205
                                                                                                                                                                                                                                              616 AFYDALNSI 624
; TYPE: PRT
; ORGANISM: Homo sapiens
US-11-289-102-250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  , ORGANISM: Glycine max US-10-953-349-24876
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ORGANISM: Glycine max
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US-10-953-349-6784
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1.6%; Score 7; DB 7;
100.0%; Pred. No. 33;
tive 0; Mismatches
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Best Local Similarity 100.0%; Pred. No. 33;
Matches 7; Conservative 0; Mismatches
                    ; LOCATION: (1)..(161)
; OTHER INFORMATION: Ceres Seq. ID no. 13618494
US-11-056-3558-105984
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| LOCATION: (1)..(248)
| OTHER INFORMATION: Ceres Seq. ID no. 13619377
| US-11-056-3558-106356
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; LOCATION: (1)..(161)
; OTHER INDORMATION: Ceres Seq. ID no. 13618494
US-11-056-3558-117223
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ORGANISM: Arabidopsis thaliana
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ORGANISM: Arabidopsis thaliana
                                                                                   Query Match
Best Local Similarity 100.v.
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NAME/KEY: peptide
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Sequence 43780, Application US/11056355B

Publication No. US20060150283A1

GENERAL INFORMATION:

APPLICANT: Brover, Vyacheslav

APPLICANT: Braxandrov, Nickolai

TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding

TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding

TITLE OF INVENTION: Polypeptides Encoded Thereby

FILE REFERENCE: 2750-1590PUS2

CURRENT APPLICATION UNMBER: 08/11/056,355B

CURRENT FILING DATE: 2004-02-13

PRIOR FILING DATE: 2004-02-13

NUMBER OF SEQ ID NOS: 119966

SEQ ID NO 43780

LENGTH: 161
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APPLICANT: Browner, Vyachealav
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Defermined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REFERENCE: 2750-1590PUS2
CURRENT APPLICATION NUMBER: US/11/056,355B
CURRENT PILING DATE: 2005-02-14
PRIOR APPLICATION NUMBER: 60/544,190
PRIOR FILING DATE: 2004-02-13
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100.0%; Pred. No. 33;
tive 0; Mismatches
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                                                                                                          NAME/KEY: peptide

| LOCATION: (1)..(161)

| OTHER INFORMATION: Ceres Seq. ID no. 13497623

US-11-056-355B-34075
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; OTHER INFORMATION: Ceres Seq. ID no. 13497623
US-11-056-3558-43780
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                                         TYPE: prt
ORGANISM: Arabidopsis thaliana
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ORGANISM: Arabidopsis thaliana
FEATURE:
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ORGANISM: Arabidopsis thaliana
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SEQ ID NO 105984
LENGTH: 161
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Best Local Similarity 100.
Matches 7; Conservative
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SEQ ID NO 34075
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APPLICANT: Brover,
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REPERENCE: 2750-12500-125
CURRENT APPLICATION NUMBER: US/11/056,355B
CURRENT FILING DATE: 2005-02-14
PRIOR APPLICATION NUMBER: 60/544,190
NUMBER OF SEQ ID NOS: 119966
SEQ ID NO 106366
LENGTH: 248
                                                                                                                                                                                                                                                                                                                                                           APPLICANT: Brover, Vyacheslav
APPLICANT: Brover, Vyacheslav
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REFERENCE: 2750-1590PUS2
CURRENT PFLING APPLICATION NUMBER: US/11/056,355B
CURRENT FILING DATE: 2005-02-14
PRIOR APPLICATION NUMBER: 60/544,190
PRIOR PILING DATE: 2004-02-13
NUMBER OF SEQ ID NOS: 119966
SEQ ID NO 117223
LENGTH: 161
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                                                                                                                                                                                                                                  Sequence 117605, Application US/11056355B

Publication No. US20660150283A1

GENERAL INFORMATION:

APPLICANT: Brower, Vyacheslav

APPLICANT: Alexandrov, Nickolai

TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding

TITLE OF INVENTION: Polypeptides Encoded Thereby

FILE REPERENCE: 2750-1590FUS2

CURRENT APPLICATION NUMBER: US/11/056,355B

CURRENT FILING DATE: 2005-02-14

PRIOR APPLICATION NUMBER: 60/544,190

PRIOR PRILING DATE: 2004-02-13

NUMBER OF SEQ ID NOS: 119966

SEQ ID NO 117605
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US-11-056-355B-106365
Sequence 106365, Application US/11056355B
Sequence 106365, Application US/11056355B
Sequence 106365, Application No. US2066150283A1
GENERAL INFORMATION:
APPLICANT: Brover, Vyacheslav
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REPERROR: 2750-1590P052
CURRENT FILING DATE: 2050-20-14
PRIOR FILING DATE: 2006-20-14
PRIOR FILING DATE: 2004-02-13
NUMBER OF SEQ ID NOS: 119966
SEG ID NO 106365
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1.6%; Score 7; DB 7; Length 248; 100.0%; Pred. No. 49; tive 0; Mismatches 0; Indels
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100.0%; Pred. No. 55;
tive 0; Mismatches
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Best Local Similarity 100.0%; Pred. No. 49;
Matches 7; Conservative 0; Mismatches
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| NAME/KEY: peptide
| LOCATION: (1)..(277)
| OTHER INPORMATION: Ceres Seq. ID no. 13619376
| US-11-056-355B-106365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; LOCATION: [1]..(248)
; OTHER INFORMATION: Ceres Seq. ID no. 13619377
US-11-056-3558-117605
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ORGANISM: Arabidopsis thaliana
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ORGANISM: Arabidopsis thaliana
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Matches 7; Conservative
Query Match 1.6
Best Local Similarity 100.
Matches 7; Conservative
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LOCATION: (1)..(2
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Publication No. US20060107345A1

GENERAL INFORMATION:

APPLICANT: ALEXANDROW, Nickolai et al.

TITLE OF INVENTION: SRQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES

TITLE OF INVENTION: ENCONDED THERBY

TITLE OF INVENTION: ENCONDED THERBY

TITLE OF INVENTION: US/10/953,349

CURRENT APPLICATION UNMBER: US/10/953,349

CURRENT FILING DATE: 2004-09-30

NUMBER OF SEQ ID NOS: 40252

SOFTWARE: Patentin version 3.3

SEQ ID NO 27635

LENGTH: 293
  Sequence 1176-04, Application US/11056355B
; Publication No. US20060150283A1
; GENERAL INFORMATION:
; APPLICANT: Brover, Vyacheslav
; APPLICANT: Brover, Vyacheslav
; APPLICANT: Brover, Vyacheslav
; APPLICANT: Brover, Vyacheslav
; TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
; TITLE OF INVENTION: Polypeptides Encoded Thereby
; FILE REPRENCE: 2750-1590P052
; CURRENT PILING DATE: 2005-02-14
; PRIOR APPLICATION NUMBER: US/11/056,355B
; RICR APPLICATION NUMBER: 60/544,190
; PRIOR FILING DATE: 2004-02-13
; NUMBER OF SEQ ID NOS: 119966
; SEQ ID NO 117604
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1.6%; Score 7; DB 6;
Best Local Similarity 100.0%; Pred. No. 58;
Matches 7; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1.6%; Score 7; DB 7;
100.0%; Pred. No. 55;
itive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                           Search completed: August 11, 2006, 20:17:18 Job time : 17.9493 secs
                                                                                                                                                                                                                                                                                                                                                              TYPE: prt
ORGANISM: Arabidopsis thaliana
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; ORGANISM: Triticum aestivum
US-10-953-349-27635
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 1.69
Best Local Similarity 100.0
Matches 7; Conservative
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US-11-056-355B-117604
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(without alignments)
1723.552 Million cell updates/sec
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1 MFQPLLDAFIESASIKKMPL.....YHKSLPLLRAIRRWVKKLGL
GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
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                                                                                OM protein - protein search, using sw model
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Gapop 60.0 , Gapext 60.0
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Post-processing: Listing first 45 summaries

seq length: 0 seq length: 200000000

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A_Geneseq_8:* 1:geneseq_1980s:*	2: geneseqp1990s:* 3: geneseqp2000s:*	 6: geneseqp2003as:*	dbeseueb :	9: geneseqp2005s:* 10: geneseqp2006s:*	,
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	ion	Helicobac	H. pylori	Ħ	Ħ.	He		He	Helicobac	H. pylori		Alpha-1,3	Helicobac			Helicobac	H. pylori		He		Helicobac	Helicobac	Alpha-1,3	Helicobac
	Description	Aeb70147	Abg30883	Abg30887	Abg30884	Aaw86008	Abg30886	Abu51509	Abu52257	Abg30885	Adj77820	Adj27355	Aeb70141	Abu51153	Abu51565	Abu51151	Aeb70197	Abg30882	Adj77814	Adj27349	Aeb70135	Adj77810	Adj27345	Aeb70131
SUMMARIES		7	9	7	4	80	9	6	7	2	0	2	-	æ	2		7	2	4	6	2	0	J.	
SUMM	ID	AEB7014	ABG30883	ABG30887	ABG30884	AAW86008	ABG30886	ABU51509	ABU5225	ABG30885	ADJ77820	ADJ27355	AEB70141	ABU51153	ABU51565	ABU51151	AEB70197	ABG30882	ADJ77814	ADJ27349	AEB70135	ADJ77810	ADJ27345	AEB70131
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The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polynucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.

Aeb70195 H. pylori Adj77812 Helicobac Adi27347 Alpha-1.3			Hel Alp	Aeb70137 Helicobac Abg30881 H. pylori	Hel.	Aeb70203 H. pylori Aeb70145 Helicobac Aab10737 H. pylori	н. н.
AEB70195 ADJ77812 ADJ27347	AEB70133 AEB70204	AEB70149 AEB70205 AEB70199	ADJ77816 ADJ27351	AEB70137 ABG30881	AEB/0154 AEB70211 AEB70193	AEB70203 AEB70145 AAB10737	AEB70177 AEB70212 AEB70190 AEB70201
391 9 432 8 432 8	246 9	456 9 247 9 256 9	277 8 277 8	501 5	559 9 231 9	246 446 35 3	119 9 545 9 171 9 245 9
43 43 9.8	43 35 8.0 9.8	32 7.3 31 7.0 31 7.0	31 7.0 31 7.0	31 7.0 29 6.6	28 6.4 27 6.1	27 6.1 26 5.9 25 5.7	លល44
22.2	222	30 31 31	32 33	ω ω ι 4ι ιυ ι	337 38	8 4 4 0 0 1	4 4 4 4 0 6 4 0

### ALIGNMENTS

useful Helicobacter pylori fucosyl transferase, PutA, protein, SEQ ID NO: 18. New isolated fucosyltransferase polynucleotides and polypeptides, for synthesizing oligosaccharides, glycoproteins, or glycolipids. Bezila DJ; Fucosyltransferase; protein production; enzyme Johnson KF, /note= "Encoded by TTT" Claim 1; SEQ ID NO 18; 97pp; English. Location/Qualifiers AEB70147 standard; protein; 440 AA. Helicobacter pylori; strain 802. (NEOS-) NEOSE TECHNOLOGIES INC. (UYAL-) UNIV ALBERTA. 22-JAN-2004; 2004US-00764212. 22-JAN-2004; 2004US-00764212. Simala-Grant J, Taylor D, (first entry) WPI; 2005-521417/53. N-PSDB; AEB70146. Misc-difference 112 US2005164338-A1 06-OCT-2005 28-JUL-2005. AEB70147; 

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                                                                                                                                                                                                                                                                              DDLRADYNNIRADYNNIRADYNNIRADYNNIRADYDRILQNRSPILEISQNTTFKIYHKA 420
                                                                                          61 NEPSDLVFGSPIGAARKILSYQNTKRVFYAGENEVPNFNLFDYAIGFDELDLRDRYLRMP
                                                                                                                                                                       DDLRADYNNLRADYNNLRADYNNLRADYNNLRADYDRLLQNRSPLLELSQNTTFKI YHKA
                                                                                                                                                                                                                                                                                                                                                                                                                                            Enzyme, fucT; alphal, 3 fucosyltransferase; oligosaccharide; Lex; Ley;
sLex; Helicobacter pylori infection; malignant cell; mammalian tumour.
                                                                     1 MFQPLLDARIESASIKKMPLSYPPLKIAVANWWGGAEFKKKSAMYFILSQRYTITLHQNP
                                                                                                                                                                                               YGYVTEKI I DAYPSHTI PI YWGSPSVAKDFNPKSFVNVHDFKNFDEA I DYVRYLHTHPNA
                                                                                                                                                                                                                                  301 YLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNFFVFYRDLNEPLVSI
                                                                                                                             LYYDRLHHKAESVNDTTAPYKIKPDSLYTLKKPSHHFKEKHPHLCAVVNDESDPLKRGFA
                                                          1 MFQPLLDAFIESASIKKMPLSYPPLKIAVANWWGGAEEFKKSAMYFILSQRYTITLHQNP
                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
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                        Length 440;
                                          Indels
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                                         0; Mismatches
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                         100.0%; Score 440; 100.0%; Pred. No. 0
                                                                                                                                                                                                                                                                                                                                                                 ABG30883 standard; protein; 440 AA
                                                                                                                                                                                                                                                                                                     YHKSLPLLRAIRRWVKKLGL 440
                                                                                                                                                                                                                                                                                                                Helicobacter pylori; strain 802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          98US-00092315.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-DEC-2000; 2000US-00733524
                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                          Matches 440; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           UYAL-) UNIV ALBERTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PI; 2002-582480/62.
                                  Local Similarity
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        Sequence 440 AA;
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21-OCT-2002
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ABG30883
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The invention relates a purified transmembrane segment-free alpha 1,3-

tucosyltransferase polyapeptide, having a repeat of the sequence: X 1-X 2-

Leu-Arg-X.3-X 4-Tyr, where X 1, X 2 and X 4 is Asp or Ash, and X 3 is

Leu-Arg-X.3-X 4-Tyr, where X 1, X 2 and X 4 is Asp or Ash, and X 3 is

Leu-Arg-X.3-X 4-Tyr, where X 1, X 2 and X 4 is Asp or Ash, and X 3 is

Is, Val or Ala. Also included are the nucleic acid encoding the protein

CG (including the complement or fragment), a vector containing the nucleic

acid, a host cell containing nucleic acid or vector, an antibody which

producing transmembrane segment-free alpha1, 3- fucosyltransferase,

comprising a host cell modified with the nucleic acid or its

comprising a host cell modified with the nucleic acid or its

compraising the produced oligosaccharides, such as Lex, Ley or SLex, by

contacting the produced oligosaccharides, such as Lex, Ley or SLex, by

contacting the bost cell with a substrate, to produce oligosaccharides

and purifying the obtained oligosaccharides. The nucleic acid is useful

contacting the obtained oligosaccharides. The nucleic acid is useful

as probe for detecting the nucleic acid, by contacting a sample with a

cucleic acid probe that hybridises to alpha1,3-fucosyltransferase

contacting the nucleic acid, by contacting a sample with

a probe for detecting hybridises to alpha1,3-fucosyltransferase

contacting the nucleic acid wilm polymerase chain reaction (PCR). The

mulifying the nucleic acid wilm polymerase chain reaction (PCR). The

cucypltransferase-fusion prodein, by growing the host cell containing a

cuctor operably linked to a polynucleotide encoding a desired polyeptide

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Claim 6; Fig 6; 37pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 440 AA;
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The invention relates a purified transmembrane segment-free alpha 1,3-
[the cost) transferase polypeptide, having a repeat of the sequence: X 1-X 2-
[the cost) transferase polypeptide, having a repeat of the sequence: X 1-X 2-
[the Nag-X 3-X 4-Tyr, where X 1, X 2 and X 4 is hap or Asn; and X 3 is
[the Nag-X 3-X 4-Tyr, where X 1, X 2 and X 4 is hap or Asn; and X 3 is
[the Nag-X 3-X 4-Tyr, where X 1, X 2 and X 4 is hap or Asn; and X 3 is
[the Nag-X 3-X 4-Tyr, where X 1, X 2 and X 4 is hap or Asn; and X 3 is
[the Nag-X 3-X 4-Tyr, where X 1, X 2 and X 4 is hap or Asn;
[the Nag-X 4 and Day or Asn 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2 and 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Enzyme, fucT, alphal, 3 fucosyltransferase, oligosaccharide, Lex; Ley,
sLex; Helicobacter pylori infection, malignant cell; mammalian tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       H. pylori alphal, 3 fucosyltransferase #7.
                                                                                                                                                                                                                                                                      ABG30887 standard; protein; 454 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Helicobacter pylori; strain 11637.
421 YHKSLPLLRAIRRWVKKLGL 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 3; Fig 6; 37pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               98US-00092315.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-DEC-2000; 2000US-00733524.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 (revised)
(first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         raylor DE, Ge Z;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-JUN-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-AUG-2003
21-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               06-JUN-2002
                                                                                                                                                                                                                                                                                                                                                              ABG30887;
                                                                                                                                                                                   RESULT 3
                                                                                                                                                                                                                                  ABG30887
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Lieurny 1 of Ala. Also included are the nucleic acid encoding the protein (including its complement or fragment), a vector containing the nucleic acid, a host cell containing nucleic acid or vector, an antibody which selectively binds to the protein and a gene expression system for selectively binds to the protein and a gene expression system for selectively binds to the protein and a gene expression system for comprising a host cell modified with the nucleic acid or its enzymatically active portion. The protein and cells are useful for producing fucosylated oligosaccharides, such as LackAc-R and GDP-fucose, and purifying the protein with a substrate such as LackAc-R and GDP-fucose, and purifying the protein with a substrate, to produce oligosaccharides and purifying the obtained oligosaccharides. The nucleic acid is useful as a probe for acteting the nucleic acid, by contacting a sample with a contacting the nucleic acid why pridisation of the probe; or by contacting the nucleic acid wing polymerase chain reaction (PCR). The colymucleotide, and detecting hybridisation of the probe; or by contacting a sample with a colymucleotide and and arranemembrane segment-free alphal.3-thosyltransferase-fusion protein, by growing the host cell containing a vector operably linked to a polymucleotide encoding a desired polympetice or peptide under conditions which allow expression and secretion of the fusion protein in a sample. The presence of the protein in the
                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       fucosyltransferase polypeptide, having a repeat of the sequence: X 1-X 2-Leu-Arg-X 3-X 4-Tyr, where X 1, X 2 and X 4 is Asp or Asn; and X 3 is Ile, Val or Ala. Also included are the nucleic acid encoding the protein
                                                                                                                                                                                      227 EFLSQYKFULCFENSQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDF 284
                                                                                                                                                                224 BFLSQYKFNLCFENSQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDF 281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Enzyme; fucT; alphal,3 fucosyltransferase; oligosaccharide; Lex; Ley;
sLex; Helicobacter pylori infection; malignant cell; mammalian tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The invention relates a purified transmembrane segment-free alpha 1,3-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
                                                                                 Length 454;
                                                                                              le-48;
                                                                               13.2%; Score 58; DB 5;
100.0%; Pred. No. 1e-48;
ive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                           H. pylori alphal, 3 fucosyltransferase #4.
                                                                                                                                                                                                                                                                                                              ABG30884 standard; protein; 476 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Helicobacter pylori; strain 26695A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-DEC-2000; 2000US-00733524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   98US-00092315.
                                                                                 13.2%;
                                                                                            (first entry)
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standardise OS field)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ge Z;
                                          Sequence 454 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US2002068347-A1
                                                                                                                                                                                                                                                                                                                                                                                             29-AUG-2003
21-OCT-2002
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                                                                                                                                                                                                                                                                                                                                                    ABG30884;
                                                                                 Query Match
                                                                                                                                                                                                                                                                     RESULT 4
ABG30884
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sample is indicative of infection by Helicobacter pylori or the presence of malignant cells. The antibody is also useful for diagnosing disease and for inhibiting abnormal alphal, 3-fucosyltransferase gene product activity. The nucleic acid is useful as part of ribozyme and/or triple helix sequences and for alphal, 3-fucosyltransferase gene regulation. Oligosaccharides synthesised using the protein or cell are useful in the development of assays to detect mammalian tumours. The present sequence represents an H. pylori alphal, 3 fucosyltransferase encdoed by the fucT gene. (Updated on 29-AUG-2003 to standardise OS field)
                                                                                                                                                                                                                     293 YLHTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPF 347
                                                                                                                                                                                                                                    297 YLHTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPF 351
                                                                                                                                                                                                                                                                                                                                                                                                                          Alpha-1,3-fucosyltransferase; fucT gene; Lewis X; Lewis Y; sialyl Lewis X; tumour associated antigen; cancer; infection; mucosal disease; diagnosis; fucosylated oligosaccharide.
                                                                                                                                                                    Length 476;
                                                                                                                                                                                            0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                   Helicobacter pylori alpha-1,3-fucosyltransferase.
                                                                                                                                                                    12.5%; Score 55; DB 5; Le
100.0%; Pred. No. 1.1e-45;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               137. .139
/note= "Asn is N-glycosylated"
332. .334
/note= "Asn is N-glycosylated"
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/note= "Asn is N-glycosylated"
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/note= "Asn is N-glycosylated"
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/note= "peptide repeat"
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/note= "peptide repeat"
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Helicobacter pylori; strain NCTC 11639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                            AAW86008 standard; protein; 464 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 p. .384
/note= "r.
385
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                                                                                                                                                                                                                                                                                                                                                                          (first entry)
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                                                                                                                                                                    Query Match
Best Local Similarity 100.
Matches 55; Conservative
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                                                                                                                                                                                                                                                                                                                                                              (revised)
                                                                                                                                             Sequence 476 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Modified-site
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29-MAR-1999
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                                                                                                                                                                                                                                                                                   RESULT 5
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98WO-CA000564.

05-JUN-1998;

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Gaps

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This is the amino acid sequence of the novel alpha-1,3-
fucosyltransferase of Helicobacter pylori NCTC 11639, as deduced from the
newly isolated fuc7 gene (see AA80321). The enzyme is characterised by 8
C-terminal heptad repeats and by the lack of a transmembrane domain. The
absence of a transmembrane domain allows the enzyme to be readily
released from recombinant host cells. The enzyme can be used in the
production of fucosylated oligosaccharides such as Lewis X, Lewis Y and
sialyl Lewis X, which are structurally similar to certain tumour
associated antigens found in mammals. These glycoconjugates also have
mammalian tumours. The enzyme can also be used to raise specific
antibodies. Inhibition of abnormal fucT gene product activity can be used
for the treatment of intestinal mucosal disease. (Updated on 17-OCT-2003)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                            New isolated alpha-1-3-fucosyltransferase gene - obtained from Helicobacter pylori, used to develop products for the diagnosis and treatment of intestinal mucosal diseases, e.g. tumours.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  239 QGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDY 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 464;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11.8%; Score 52; DB 2; Length 464
100.0%; Pred. No. 1e-42;
tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               H. pylori alphal, 3 fucosyltransferase #6.
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                                                                                                                                                                                                           Claim 6; Fig 2; 51pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-DEC-2000; 2000US-00733524.
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97US-0048857P
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(first entry)
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Best Local Similarity 100.4
Matches 52; Conservative
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                                 (UYAL-) UNIV ALBERTA
                                                                                             WPI; 1999-059913/05.
N-PSDB; AAV80321.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ge Z;
                                                                 Ge Z;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 464 AA;
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 06-JUN-1997;
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21-OCT-2002
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                                                                 raylor DE,
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Labigne A;

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The invention describes a complex of protein-protein interactions in Helicobacter pylori selected from 421 complexes given in the specification. The complex of protein-protein interactions are useful for screening for agents which modulate the interaction of proteins. Modulating compounds which binds to a targeted bacterial protein may be used for treating or preventing ulcers in a human or animal. This is the amino acid sequence of a selected interacting domain (SID), identified via protein-protein interactions. Note: Where the patent number printed at the top of the pages in the specification has obscured areas of protein sequence, the indexer has replaced the residue with an X to
                                                                                                                                                                                                                           complexes of protein-protein interactions in Helicobacter pylori, inl for identifying modulating compounds for treating or preventing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11.6%; Score 51; DB 5; Length 130
100.0%; Pred. No. 3.3e-42;
tive 0; Mismatches 0; Indels
                                                                 De Reuse H,
                                                                                                                                                                                                                                                                                                                                                                     Claim 6; Page 292; 642pp; English.
                                                                 Colland F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Colland F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         represent an illegible residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-DEC-2001; 2001WO-EP015428.
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Best Local Similarity 100.0
Matches 51, Conservative
(INSP ) INST PASTEUR.
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                                                                                                                               WPI; 2002-674910/72.
                                                                 Rain J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Legrain P, Rain J,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2002-674910/72.
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                                                                                                                                                                                                                                                                                                ulcers in mammals.
                                                                                                                                                                    N-PSDB; ABX66254.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; ABX67002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 130 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200266501-A2
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                                                                    Legrain P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ABU52257;
                                                                                                                                                                                                                                                                        useful
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                                                                                                                                                                                                                                                                                                                                                                                      producing fucosylated oligosaccharides, such as Lex, Ley or slex, by contacting the protein with a substrate such as Lex, Ley or slex, by contacting the protein with a substrate such as Lex, Ley or slex, by contacting the protein with a substrate, to produce oligosaccharides, and purifying the produced oligosaccharides. The nucleic acid is useful as a probe for detecting the nucleic acid, by contacting a sample with a nucleic acid probe that hybridises to alpha1,3-fucosyltransferase colly producing polymerase chain reaction (PCR). The amplifying the nucleic acid using polymerase chain reaction (PCR). The host cell is useful for producing a transmembrane segment-free alpha1,3-fucosyltransferase-fusion protein, by growing the host cell containing a vector operably linked to a polymuclectide encoding a desired polymerable containing a vector operably linked to a polymuclectide encoding a desired polymerable containing a vector operably linked to a polymuclectide encoding a desired polymerable containing a vector operably linked to a polymuclectide encoding a desired polymerable containing a cuestion protein and isolating the fusion protein. The antibody is useful and is in the sample, the protein in the sample is indicative of inferrior why uslice the protein in the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                     The invention relates a purified transmembrane segment-free alpha 1,3-fucosyltransferase polypeptide, having a repeat of the sequence: X_1-X_2-lea-Argy.X_3-X_4-Tyr, where X_1, X_2 and X_4 is a hap or Asn; and X_3 is lle, Val or Ala. Also included are the nucleic acid encoding the protein (including its complement or fragment), a vector containing the nucleic acid, a host cell containing nucleic acid or vector, an antibody which selectively binds to the protein and a gene expression system for producing transmembrane segment-free alphal, 3-fucosyltransferase, comprising a host cell modified with the nucleic acid or its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            fucosyltransferase gene product activity. The nucleic acid is useful as part of ribozyme and/or triple helix sequences and for alphal, 3-fucosyltransferase gene regulation. Oligosaccharides synthesised using the protein or cell are useful in the development of assays to detect mammalian tumours. The present sequence represents an H. pylori alphal, 3 fucosyltransferase enclosed by the fucT gene. (Updated on 29-AUG-2003 to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sample is indicative of infection by Helicobacter pylori or the presence of malignant cells. The antibody is also useful for diagnosing disorders and monitoring disease, and for inhibiting abnormal alphal, 3-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Helicobacter pylori selected interacting domain (SID) protein #853.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            239 QGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDY 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     243 QGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDY 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11.8%; Score 52; DB 5; Length 479;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 1.1e-42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%; Preu. ...
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                                  Example 3; Fig 6; 37pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      40200266501-A2
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Query Match Local Matches

ABU51509

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Gaps

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Length 130;

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New complexes of protein-protein interactions in Helicobacter pylori, useful for identifying modulating compounds for treating or preventing
                                                                                      Protein-protein interaction; ulcer; selected interacting domain; SID.
                                                                                                                                                                                                                                                                                                                                                                                 The invention describes a complex of protein-protein interactions in
                                                               Helicobacter pylori selected interacting domain (SID) protein #1601.
                                                                                                                                                                                                                                                           Labigne A;
                                                                                                                                                                                                                                                           De Reuse H,
ABU52257 standard; protein; 418 AA.
                                                                                                                                                                                                                                                                                                                                                            Claim 6; Page 479; 642pp; English.
                                                                                                                                                                                                                                                                                                                                        ulcers in mammals.
          CXSXLLLXBBXLXBBXBXBXBXBXBXBXBXBXBXCCXX
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28-DEC-2001; 2001WO-EP015428. 02-JAN-2001; 2001US-0259302P.

39-AUG-2002

(HYBR-) HYBRIGENICS

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Helicobacter pylori selected from 421 complexes given in the specification. The complex of protein-protein interactions are useful for secening for agents which modulate the interaction of proteins. Modulating compounds which binds to a targeted bacterial protein may be used for treating or preventing ulcers in a human or animal. This is the amino acid sequence of a selected interacting domain (SID), identified via protein-protein interactions. Note: Where the patent number printed at the top of the pages in the specification has obscured areas of protein sequence, the indexer has replaced the residue with an X to
                                                                                                                                                                                                                                                                          represent an illegible residue
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Sequence 418 AA;

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                             Gaps
                                                           293 YLHTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYH 343
                                                                                290 YLHTHPWAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYH 340
                               ö
11.6%; Score 51; DB 5; Length 418; 100.0%; Pred. No. 9.3e-42;
                            0; Indels
         100.0%; Pred. ...
                               51; Conservative
              Best Local Similarity
 Query Match
                               Matches
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H. pylori alphal, 3 fucosyltransferase #5. ABG30885 standard; protein; 424 AA (revised)
(first entry) 21-OCT-2002 29-AUG-2003 RESULT 9 ABG30885 

Enzyme, fucT, alphal,3 fucosyltransferase, oligosaccharide, Lex; Ley; sLex; Helicobacter pylori infection, malignant cell; mammalian tumour.

Helicobacter pylori; strain 26695B

US2002068347-A1

06-JUN-2002

07-DEC-2000; 2000US-00733524.

98US-00092315. 05-JUN-1998;

(UYAL-) UNIV ALBERTA

Ge Z; Taylor DE, WPI; 2002-582480/62.

Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.

Example 3; Fig 6; 37pp; English.

The invention relates a purified transmembrane segment-free alpha 1,3fucosyltransferase polypeptide, having a repeat of the sequence: X 1-X 2fucusyltransferase polypeptide, having a repeat of the sequence: X 1-X 2fueu-MFGY.X 3-X 4-Tyr, where X 1, X 2 and X 4 is Asp or Asn; and X 3 is

Ile, Val Or Ala. Also included are the mucleic acid encoding the protein

(including its complement or fragment), a vector containing the nucleic

acid, a host cell containing nucleic acid or vector, an antibody which

acid, a host cell containing nucleic acid or vector, an antibody which

producing transmembrane segment-free alphal, 3- fucosyltransferase,

comprising a host cell modified with the nucleic acid or its

comprising a host cell modified with the nucleic acid or its

producing fucosylated oligosacharides, such as Lac. Ley or SLex, by

contacting the protein with a substrate such as Lac. Ley or SLex, by

contacting the produced oligosaccharides, or by culturing the cell,

and purifying the obtained oligosaccharides. The nucleic acid is useful

se a probe for detecting the nucleic acid, by contacting a sample with a

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nucleic acid probe that hybridises to alphal, 3-fucosyltransferase
polymucleotide, and detecting hybridisation of the probe; or by
amplifying the nucleic acid using polymerase chain reaction (PCR). The
host cell is useful for producing a transmembrane segment-free alphal, 3-
fucosyltransferase-fusion protein, by growing the host cell containing a
ceftor operably linked to a polymucleotide encoding a desired polypeptide
or peptide under conditions which allow expression and secretion of the
fusion protein and isolating the fusion protein. The antibody is useful
ce fusion protein and isolating the fusion protein. The antibody is useful
ce family and the protein in a sample. The presence of the protein in the
sample is indicative of infection by Helicobacter pylori or the presence
of malignant cells. The antibody is also useful for diagnosing disorders
of monitoring disease, and for inhibiting abnormal alphal, 3-
fucosyltransferase gene product activity. The nucleic acid is useful as
part of ribozyme and/or triple helix sequences and for alphal, 3-
the protein or cell are useful in the development of assays to detect
mammalian tumours. The present sequence represents an H. Pylori alphal, 3-
choosyltransferase entedoed by the fuct gene. (Updated on 29-MG-2003 to
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 424;
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Best Local Similarity 100.0
Matches 51, Conservative
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ADJ77820 standard; protein; 425 AA RESULT 10

ADJ77820;

Helicobacter pylori strain 26695 FutA protein SeqID 12. 06-MAY-2004 (first entry)

Futh, Futh, alpha 1-3/4 fucosyltransferase; glycoprotein; glycolipid; fucose; N-acetylglucosamine; glycoconjugate; enzyme.

Helicobacter pylori.

WO2004009838-A2

29-JAN-2004. 

23-JUL-2003; 2003WO-US023057

23-JUL-2002; 2002US-0398156P. 08-NOV-2002; 2002US-0424894P.

(NEOS-) NEOSE TECHNOLOGIES INC.

Johnson KF, Bezila DJ;

WPI; 2004-123401/12. N-PSDB; ADJ77819. New isolated polynucleotide encoding fucosyltransferase protein, us for synthesizing oligosaccharide moiety on a protein or lipid that unglycosylated in its native form or for synthesizing glycolipids.

Claim 12; SEQ ID NO 12; 72pp; English.

This invention relates to novel isolated polynucleotides and the encoded polypeptides thereof, which are related to the fucosyltransferase enzymes firth and FuED of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycoproteins and glycolipids with the desired

NO: 12

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New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
    293 YLHTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYH 343
                         297 YLHTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYH 347
                                                                                                                                                                                                                                                                    Helicobacter pylori fucosyl transferase, FutA, protein, SEQ ID
                                                                                                                                                                                                                                                                                                          Fucosyltransferase; protein production; enzyme
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 1; SEQ ID NO 12; 97pp; English
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABU51153 standard; protein; 124 AA
                                                                                                                                                                                                                                                                                                                                                    Helicobacter pylori; strain 26695.
                                                                                                                                            AEB70141 standard; protein; 425
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                                                                                                                                                                                                                            (first entry)
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Best Local Similarity 100.
Matches 51; Conservative
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N-PSDB; AEB70140.
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                                                                                                         RESULT 12
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ID AEB
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oligosaccharide moieties (i.e. by transfer of a fucose residue to Nacetylglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial fucosyltransferase is unaffected by the sialyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, and encrymes offer a large cost saving relative to mammalian expression systems. This polypeptide sequence is an H. pylori strain 26695 FutA protein sequence of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This sequence represents an alpha-1,3/4-fucosyltransferase protein which was used in the method of the invention for producing a fucosylated glycoprotein. The method involves contacting a recombinant fucosyltransferase protein with a mixture comprising a donor substrate which comprises a fucosyl residue, and an acceptor substrate on a slycoprotein, under conditions such that the fucosyltransferase protein catalyzes the transfer of the fucosy residue from a donor substrate to the acceptor substrate on the glycoprotein. The method is useful for producing fucosylated glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate and acceptor substrate on glycoprotein.
                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      alpha-1; 3/4-fucosyltransferase; glycoprotein; fucosyltransferase;
                                                                                                                                                                                                                                                                                                            293 YLHTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYH 343
                                                                                                                                                                                                                                                                                                                                   297 YLHTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYH 347
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                                                                                                                                                                                                                            11.6%; Score 51; DB 8; Length 425; 100.0%; Pred. No. 9.5e-42; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Helicobacter pylori; strain 26695FutA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Alpha-1,3/4-fucosyltransferase.
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2002US-0424894P.
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                                                                                                                                                                                                                                                                      Conservative
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                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 51; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 2004-132958/13.
N-PSDB; ADJ27354.
                                                                                                                                                                                      Sequence 425 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO2004009793-A2
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                                                                                                                                                                                                                                                                      51;
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RESULT 11 ADJ2735

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Bezila DJ;

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The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polynucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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100.0%; Pred. No. 9.5e-42;
tive 0; Mismatches 0;
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Gaps

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Length 425;

11.6%; Score 51; DB 8; Length 425 100.0%; Pred. No. 9.5e-42; iive 0; Mismatches 0; Indels

Conservative

Query Match Best Local Similarity Matches 51; Conserv

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Labigne A;

De Reuse H,

Colland F,

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The invention describes a complex of protein-protein interactions in Helicobacter pylori selected from 421 complexes given in the specification. The complex of protein-protein interactions are useful for serening for agents which modulate the interaction of proteins. Modulating compounds which binds to a targeted bacterial protein may be used for treating or preventing ulers in a human or animal. This is the amino acid sequence of a selected interacting domain (SID), identified via protein-protein interactions. Note: Where the patent number printed at the top of the pages in the specification has obscured areas of represent an illegible residue
                                                                                                                                                                                                                                              New complexes of protein-protein interactions in Helicobacter pylori, useful for identifying modulating compounds for treating or preventing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Protein-protein interaction; ulcer; selected interacting domain; SID
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 10.5%; Score 46; DB 5; Length 124; Best Local Similarity 100.0%; Pred. No. 3.1e-37; Matches 46; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABU51565 standard; protein; 89 AA.
                                                                                                                                                                                                                                                                                                            Claim 6; Page 205; 642pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-DEC-2001; 2001WO-EP015428.
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                                                           28-DEC-2001; 2001WO-EP015428
                                                                                          02-JAN-2001; 2001US-0259302P
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(INSP ) INST PASTEUR
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(INSP ) INST PASTEUR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2002-674910/72
                                                                                                                                                                    Legrain P, Rain J,
                                                                                                                                                                                                  WPI; 2002-674910/72
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                                                                                                                                                                                                                    N-PSDB; ABX65897.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 124 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200266501-A2
WO200266501-A2
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         29-AUG-2002
                              29-AUG-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABU51565;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ABU51565
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                                                                                                                                   The invention describes a complex of protein-protein interactions in Helicobacter pylori selected from 421 complexes given in the specification. The complex of protein-protein interactions are useful for screening for agents which modulate the interaction of proteins. Modulating compounds which modulate the interaction of proteins used for treating or preventing ulcers in a human or animal. This is the amino acid sequence of a selected interacting domain (SID), identified via protein-protein interactions. Note: Where the patent number printed at the top of the pages in the specification has obscured areas of protein sequence, the indexer has replaced the residue with an X to represent an illegible residue
                        New complexes of protein-protein interactions in Helicobacter pylori, useful for identifying modulating compounds for treating or preventing ulcers in mammals.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New complexes of protein-protein interactions in Helicobacter pylori, useful for identifying modulating compounds for treating or preventing
                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Helicobacter pylori selected interacting domain (SID) protein #494.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                         304 MLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPF 347
                                                                                                                                                                                                                                                                                                                                                                                                    Length 89;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Labigne A;
                                                                                                                                                                                                                                                                                                                                                                                              Query Match
10.0%; Score 44; DB 5; Le
Best Local Similarity 100.0%; Pred. No. 2.3e-35;
Matches 44; Conservative 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABU51151 standard; protein; 169 AA
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                                                                                                          Claim 6; Page 305; 642pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Colland F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  28-DEC-2001; 2001WO-EP015428
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(INSP ) INST PASTEUR
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Helicobacter pylori.
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N-PSDB; ABX66310
                                                                                                                                                                                                                                                                                                                                                                  Sequence 89 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 15
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Gaps

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Labigne A;

De Reuse H,

Colland F,

amino acid sequence of a selected interacting domain (SID), identified via protein-protein interactions. Note: Where the patent number printed at the top of the pages in the specification has obscured areas of protein sequence, the indexer has replaced the residue with an X to represent an illegible residue 888888

Sequence 169 AA;

Gaps ; 0 Query Match
10.0%; Score 44; DB 5; Length 169;
Best Local Similarity 100.0%; Pred. No. 4.1e-35;
Matches 44; Conservative 0; Mismatches 0; Indels

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Search completed: August 11, 2006, 20:00:03 Job time : 117.721 secs

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5.1.9	Biocceleration I
version	- 2006
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OM protein - protein search, using sw model

August 11, 2006, 20:00:25 ; Search time 20.6557 Seconds Run on:

(without alignments)
2049.570 Million cell updates/sec

US-10-764-212-18 Title: Perfect score:

440 1 MFQPLLDAFIESASIKKOMPL.....YHKSLPLLRAIRRWVKKLGL 440 Sequence:

Gapop 60.0 , Gapext 60.0 OLIGO Scoring table:

283416 segs, 96216763 residues Searched:

Н Word size :

283416 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

PIR 80:* Database :

1: pirl:* 2: pir2:* 3: pir3:* 4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

Description	fucosyltransferase	fucosyltransferase	1	alpha (1,3)-fucosy	ring finger protei	probable regulator	hypothetical prote	heat shock gene re	conserved hypothet		surface-layer 125K	copia polyprotein	ZK112.7 protein -		probable nucleotid	hypothetical prote	hypothetical prote	ρ.,	hypothetical prote				shikimate kinase (	hypothetical prote	hypothetical prote		a)		shikimate kinase (
ID	C64601	C64567	G71862	B71914	T09482	A87080	872958	F81676	T37941	B33856	A33856	OFFFCP	S44887	AC0264	C97249	B90131	H97620	AG2843	T26882	B71464	H84992	AC1000	AD0019	G83712	C90170	E64443	AI0696	E84078	A65134
DB	7	~	~	~	~	7	7	~	~	0	~	ч	~	C)	7	~	~	7	~	7	~	~	~	~	7	~	N	N	п
Length	476	425	436	454	667	287	354	392	959	745	1176	1409	3343	128	152	153	162	162	169	172	173	173	173	174	177	184	215	215	240
% Query Match	12.5	11.6	9.5	9.5	٠.	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Score	55	51	42	42	σ	00	80	80	œ	80	80	80	60	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Result	1	8	ю	4	S	ø	7	60	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29

shikimate kinase I shikimate kinase I	inpochetical prote hypothetical prote hypothetical prote hypothetical prote	hypothetical prote glycerol-3-phospha glycerol-3-phospha	homoserine O-succi probable ATP-bindi hypothetical prote	glyceraldenyde-3-p iron(III)-binding glyceraldehyde-3-p hypothetical prote
H91157 F86003	533656 T22978 B87434 G96545	S50964 H71876 A64640	F86864 B75101 T41507	DESPGA AG3582 E84043 AC2601
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30	3 3 3 7 5 4 3 2	36 38	39 4 4 0 1 0	ር4 64 44 ር4 64 44 44 ር4 64 44 44 44

## **ALIGNMENTS**

 RESULT 1 C64601 fucosyltransferase - Helicobacter pylori (strain 26695) C;Species: Helicobacter pylori C;Date: 09-Aug-1997 #sequence_revision 09-Aug-1997 #text_change 09-Jul-2004
 R.Tomb, J.F.; White, O.; Kerlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, R.D.; Peterson, S.; Loftus, B.; Richardson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McKenney, son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey, L. Nathra, 388 539-547 1947
A;Authors: Wallin, B.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser, C.N. A;Title: The complete genome sequence of the gastric pathogen Helicobacter pylori. A;Reference number: A64520; MUID:97394467; PMID:9252185
 Astatus: preliminary, nucleic acid sequence not shown; translation not shown A; Molecule type: DNA A; Molecule type: DNA A; Molecule type: DNA A; Cross references: 1-476 CTOSS TREFERENCES: 0.00000000000000000000000000000000000
 Query Match 12.5%; Score 55; DB 2; Length 476; Best Local Similarity 100.0%; Pred. No. 2.6e-48; Matches 55; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
CY 293 YLHTHPNAYLDMLYENPLNTLDGKAYPYQDLSFKKILLDFFKTILLENDTIYHNNPF 347

fucosyltransferase - Helicobacter pylori (strain 26695)

Cispecies: Helicobacter pyloric control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the cont

ö Gaps ö Query Match
11.6%; Score 51; DB 2; Length 425;
Best Local Similarity 100.0%; Pred. No. 3.2e-44;
Matches 51; Conservative 0; Mismatches 0; Indels

293 YLHTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYH 343

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A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Rosidues: 1-667 <PER>A;Crostdues: 1-667 <PER>A;Crostdues: 1-667 <PER>C;Crostdues: 0.01PROT:015344; UNIPARC:UP1000012F0B6; EMBL:AF035360; NID:g2827993; IC;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Cross-references: UNIPROT: Q9CC29; UNIPARC: UPI00000C6D89; GB: ALA50380; NID: g13093263; P1
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A;Residues: 1.334 «SMI>
A;Cross-references: UND:Q49889; UNIPARC:UPI0000B09BA; EMBL:U00021; NID:g467141; PIDN
C;Superfamily: regulatory protein spooJ
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Nature 409, 1007-1011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011, 2011
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C'Date: 19-War-1997 #sequence_revision 25-Apr-1997 #text_change 09-Jul-2004
C'Accession: S72958
R'Smith, D.R.; Robison, K.
submitted to the RMBL Data Library, November 1993
A;Description: Mycobacterium leprae cosmid L247.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Species: Mycobacterium leprae
C;Date: 20-Apr-2001 #sequence_revision 20-Apr-2001 #text_change 09-Jul-2004
C;Accession: A87080
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 667;
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100.0%; Pred. No. 7.6;
tive 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 2.0%; Score 9; DB 2
Best Local Similarity 100.0%; Pred. No. 1.2
Matches 9; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                        A;Map position: Xp22.3
C;Superfamily: rfp transforming protein
F;6-65/Domain: RING finger homology <RRN>
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Matches 8; Conservative
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A;Status: preliminary
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C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004
C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004
C;Accession. B19194 L.S.L.; Moir, D.T.; King, B.L.; Brown, B.D.; Doig, P.C.; Smith, D.R.; K;Alm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, B.D.; Doig, P.C.; Smith, D.R.; Ives, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; Vovis, G.F.; Nature 397, 176-180, 1999
A;Title: Genomic sequence comparison of two unrelated isolates of the human gastric path A;Reference number: A71800; MUID:99120557; PMID:9923682
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A;Molecule type: DNA
A;Molecule type: DNA
A;Residues: 1-436 <ARN>
A;Kesidues: 1-436 <ARN>
A;Cross-references: UNIPROT:Q9ZKD7; UNIPARC:UPI00000D36D2; GB:AE001528; GB:AE001439; NID
A;Experimental source: strain J99
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A;Experimental source: strain J99
C;Genetics:
                                                                                                                                                                                                                                                                                                                            C;Species: Helicobacter pylori
A;Variety: strain J99
A;Variety: strain J99
A;Variety: strain J99
C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004
C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 09-Jul-2004
C;Accession. G71862.
B;Alm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, E.D.; Doig, P.C.; Smith, D.R.; Ives, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; Vovis, G.F.; Nature 397, 176-180, 1999
A;Title: Genomic sequence comparison of two unrelated isolates of the human gastric path A;Reference number: A71800; MUID:99120557; PMID:9923682
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C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 16-Jul-1999 #sequence_revision 16-Jul-1999 #text_change 09-Jul-2004
C;Accession: T10948.
R;Perry, J.; Feather, S.; Smith, A.; Palmer, S.; Ashworth, A.
submitted to the EMBL Data Library, November 1997
A;Description: The human FXY maps to chromosome Xp22.3: Implications for evolution of A;Reference number: 216687
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                      297 YLHTHPNAYLDMLYENPLATLDGKAYFYQDLSFKKILDFFKTILENDTIYH 347
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100.0%; Pred. No. 6.8e-35;
tive 0; Mismatches 0; Indels
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Matches 42; Conserva
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Best Local Similarity
Matches 42; Conserva
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A, Status: preliminary
A, Molecule type: DNA
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copia polyprotein - fruit fly (Drosophila melanogaster) retrotransposon copia
N;Contains: copia protein, 31K; copia protein, 48K; proteinase
C;Species: Drosophila melanogaster
C;Species: Drosophila melanogaster
C;Species: 04-Dec-1986 #sequence revision 04-Dec-1986 #text_change 09-Jul-2004
C;Accession: A03324; S03612; $\overline{8}$14835
R;Mount, S.M.; Rubin, G.M.
Mol. Cell. Biol. 5, 1630-1638, 1985
A;Title: Complete nucleotide sequence of the Drosophila transposable element copia: homol A;Reference number: A03324; MUID:85267679; PMID:2410772
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J. Bacteriol. 171, 4178-4188, 1989
A;Title: Cloning and sequencing of the gene encoding a 125-kilodalton surface-layer prote
A;Reference number: A33856; MUID:89327128; PMID:2666389
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A; Residues: 1-1409 <MOU>
A; Residues: 1-1409 <MOU>
A; Residues: 1-1409 <MOU>
A; Cross-references: UNIPROT: P04146; UNIPARC: UP10000127EE3; GB: M11240; NID: G158615; PIDN: P;
B; Miller, K.; Rosenbaum, U; Zbrzezna, V.; Pogo, A.O.
Niucleic Acids Res. 17, 2134, 1989
A; Title: The nucleotide sequence of Drosophila melanogaster copia-specific 2.1-kb mRNA.
A; Reference number: S03612; MUD: 89183629; PMID: 2538806
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A, Residues: 1-391,1375-1409 <MIL>
A, Residues: 1-391,1375-1409 <MIL>
A, Residues: 1-391,1375-1409 <MIL>
A, Cross-references: UNIPARC: UP1000002A70B; EMBL: X13719; NID: 97745; PIDN: CAA31997.19 PID: ER; Prossbioka, K.; Honma, H.; Zushi, M.; Kondo, S.; Togashi, S.; Miyake, T.; Shiba, T.
BENBO J. 9, 535-541, 1990
A, Title: Virus-like particle formation of Drosophila copia through autocatalytic processinals. Reference number: S14835; MUID: 90151630; PMID: 1689241
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A;Cross-references: UNIPARC:UPI000002A70E; EMBL:X54147; NID:97749; PIDN:CAA38086.1; PID:
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C;Date: 09-Mar-1990 #sequence_revision 09-Mar-1990 #text_change 09-Jul-2004
C;Accession: A33856
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100.0%; Pred. No. 23;
Live 0; Mismatches
                                                                                                                                   DB 2;
                                                                                                                             Query Match 1.8%; Score 8; DB 2
Best Local Similarity 100.0%; Pred. No. 15;
Matches 8; Conservative 0; Mismatches
A;Molecule type: DNA
A;Residues: 1-745 <BOW>
A;Cross-references: UNIPARC:UPI000017ACA5
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A,Cross-references: PlyBase:FBgn0000349
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A;Molecule type: DNA
A;Residues: 1-392 «IEET»
A;Cross-references: UNIPROT:PS4306; UNIPARC:UPI00000579FA; GB:AE002336; GB:AE002160; NIC
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C;Date: 09-Mar-1990 #sequence_revision 09-Mar-1990 #text_change 30-Sep-1993
C;Accession: B33856
R;Bowditch, R.D.; Baumann, P.; Yousten, A.A.
J. Bacteriol. 171, 4178-4188, 1989
J. Bacteriol. 171, 4178-4188, 1989
A;Title: Cioning and sequencing of the gene encoding a 125-kilodalton surface-layer prot
A;Reference number: A33856; MUID:89327128; PMID:2666389
                                                                                                                                                                                                                                                                                        R;Read, T.D.; Brunham, R.C.; Shen, C.; Gill, S.R.; Heidelberg, J.F.; White, O.; Hickey, C.; Dodson, R.; Gwinn, M.; Nelson, W.; DeBoy, R.; Kolonay, J.; McClarty, G.; Salzberg, McLieic Acids Ree. 28, 1397-1406, 2000
A;Title: Genome sequences of Chlamydia trachomatis MoPn and Chlamydia pneumoniae AR39.
A;Reference number: A81500; MUID:20150255; PMID:10684935
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A;Experimental source: strain 972h-; cosmid c1952
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                                                                                                                                                               heat shock gene repressor HcrA TC0673 [imported] - Chlamydia muridarum (strain Nigg)
C;Species: Chlamydia muridarum, Chlamydia trachomatis MoPn
C;Date: 31-Mar-2000 #sequence_revision 31-Mar-2000 #text_change 09-Jul-2004
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R;McDougall, R.C.; Rajandream, M.A.; Barrell, B.G.; Bothe, G.; Pohl, T. submitted to the EMBL Data Library, August 1999
A;Reference number: 221755
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100.0%; Pred. No. 8.3;
iive 0; Mismatches 0; Indels
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A;Kstuus: preliminary: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-656 <MCD>
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Matches 8; Conservative
164 EPLVSIDD 171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    153 LVSIDDLR 160
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Matches 8; Conserv
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                                                                                                                                                                                                                                                                    C;Accession: F81676
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                                                                                              RESULT 8
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Search completed: August 11, 2006, 20:09:15 Job time: 22.6557 secs
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Best Local Similarity 100.0
Matches 7; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                 A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-152 <KUR>
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C;Date: 02-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 09-Jul-2004
C;Date: 02-Nov-2001 #sequence_revision 02-Nov-2001 #text_change 09-Jul-2004
C;Accession AC0264
R;Parkhill, J.; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; Prentice, M.B. deno-Tarraga, A.M.; Chillingworth, T.; Cronin, A.; Davies, R.M.; Davis, P.; Dougan, G.; Il, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; Whitehead, S.; Barrell, Nature 413, 523-527, 2001
A;Title: Genome sequence of Yersinia pestis, the causative agent of plague.
A;Reference number: AB0001; MUID:21470413; PMID:11586360
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Residues: 1-3343 <DUZ>
A;Cross-references: UNIPROT:P34616; UNIPARC:UP1000013BC7C; EMBL:L14324; NID:9289740; PIE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Introns: 39/1; 74/3; 122/3; 209/2; 287/3; 333/2; 489/1; 611/2; 714/1; 939/3; 1002/2; C;Keywords: cytoskeleton; transmembrane protein
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZK112.7 protein - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 14-Sep-1994 #sequence_revision 12-May-1995 #text_change 09-Jul-2004
C;Accession: S44887
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1.8%; Score 8; DB 2; Length 3343;
Best Local Similarity 100.0%; Pred. No. 58;
Matches 8; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                           Query Match
1.8%; Score 8; DB 1; Length 1409;
Best Local Similarity 100.0%; Pred. No. 27;
Matches 8; Conservative 0; Mismatches 0; Indels
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A,Mobile element: retrotransposon copia
C;Superfamily: retrovirus-related polyprotein
C;Keywords: polyprotein; proteinase
F;2-433/Product: copia protein, 48K #status predicted <MAT1>
F;2-270/Product: copia protein, 31K #status predicted <MAT2>
F;271-433/Product: proteinase #status predicted <MAT3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                R.Du, Z. submitted to the EMBL Data Library, May 1993
A.Description: Sequence of the C. elegans cosmid ZK112.
A.Reference number: S44616
A.Accession: S44887
A.Status: preliminary
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100.0%; Pred. No. 32;
tive 0; Mismatches
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Best Local Similarity 100.
Matches 7; Conservative
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314 PPLKIAVA 321
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A;Molecule type: DNA
A;Residues: 1-128 <KUR>
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PESSULT 15
C97249
probable nucleotide-binding protein, YjeE family [imported] - Clostridium acetobutylicum
C;Gpecies: Clostridium acetobutylicum
C;Gpecies: Clostridium acetobutylicum
C;Gpecies: Clostridium acetobutylicum
C;Gpecies: Clostridium acetobutylicum
C;Gpecies: Cort-2004
C;Accession: C97249
E;Nolling, J.; Breton, G.; Omelchenko, M.V.; Markarova, K.S.; Zeng, Q.; Gibson, R.; Lee,
J.; Bacteriol. 183, 4823-4838, 2001
A;Title: Genome Sequence and Comparative Analysis of the Solvent-Producing Bacterium Clos
A;Reference number: A96900; MUD:21359325; PMID:21359325
A;Accession: C97249
A;Reference number: A96900; MUD:21359325; PMID:21359325
A;Reference number: A96900; MUD:21359325; PMID:21359325
A;Reference number: A96900; MUD:21359325; PMID:21359325
A;Reference number: A96900; MUD:21359325; PMID:21359325
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A;Reference number: A96900; MUD:21359325; PMID:21359325
A;Reference number: A96900; MUD:21359325
A;Reference number
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OrderedLocusNames=HP0651; ORFNames=HP_0651;
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mus cervico
mastomys hu
arvicola te
mus platyth
mus spicile
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025366 helicobacte
030511 helicobacte
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                                                     August 11, 2006, 19:54:19 ; Search time 155.082 Seconds (without alignments) 2624.463 Million cell updates/sec
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1 MFQPLLDAFIESASIKKMPL.....YHKSLPLLRAIRRWVKKLGL
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025142
Q68t35
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07q403
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0798b1
GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
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                                                                                                                                                             2849598 seqs, 925015592 residues
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030511 HELPY
025112 HELPY
055135 HELPY
092KD7 HELPY
091834 HELPY
080Z72 MUSMA
080Z72 MUSMA
080Z72 MUSMA
080Z78 WUSSP
080Z81 ARVTE
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080Z81 HELPY
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080Z81 ARVTE
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08SXG4 DROME
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Q8FU16_CORBF
Q4BR25_BURVI
Q7Q403_ANOGA
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                                    OM protein - protein search, using sw model
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Gapop 60.0 , Gapext 60.0
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1: uniprot_sprot:*
2: uniprot_trembl:*
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32 8 1.8 333 2 QBNZF1 STRPB QBNZF1 Streptococcc 33 8 1.8 336 1 RUVB HELHP QTV108 helicobacte QTV108 helicobacte 34 8 1.8 336 1 QBNZE5 BACTI QC2niz6 aster yello 35 8 1.8 334 2 QBNZE5 BACTI QC2niz6 aster yello 36 8 1.8 335 2 QBNSW1_STRPP QASSES BACIllus th 37 2 QBNSW1_STRPP QASSW1 streptococc 38 8 1.8 357 2 QBNSW1_STRPP QASSW1 streptococc 40 8 1.8 350 2 QANSW1_STRPP QASSW1 streptococc 41 8 1.8 380 2 QASSW1_STRPP QASSW1 streptococc 42 8 1.8 380 2 QASSW1_STRPP QASSW1 streptococc 43 8 1.8 380 2 QASSW0_STRPP QASSW0 streptococc 44 8 1.8 380 2 QASSW0_STRPP QASSW0 streptococc 44 8 1.8 392 1 HRCA_FHING B530 CHIANNOIS HACK METHANOSARC A55 B 1.8 395 2 QBTWT6_METHA QSTRPP QASSW0 CANDADAILUS B530 CHIANNOIS HACK METHANOSARC QSTRPP QSTRPP QASSW0 CANDADAILUS B530 CHIANNOIS CHIANNOIS CANDADAILUS B530 CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CHIANNOIS CH	ALIGNMENTS RESULT 1 032631 HELPY TO GRASS AS AS	AC 032631; DT 01-JAN-1998, integrated into UniProtKB/TrEMBL. DT 01-JAN-1998, sequence version 1. DT 07-FBB-2006, entry version 23. DE Alpha-(1,3)-fucosyltransferase (EC 2.4.1).		RN 11] RP NUCLEOTIDE SEQUENCE. RC STRAIN-CTC 11637; RX MEDLINE-97407924; PubMed=9261148; DOI=10.1074/jbc.272.34.21349; RA Martin S.L., Edbrooke M.R., Hodgman T.C., van den Eijnden D.H.,		Copyrighted by the UniProt Consortium, see http://www.uni. Distributed under the Creative Commons Attribution-NoDeri	DR EMBL; AF006039; AAB93985.1; -; Genomic_DNA. DR GO; GO:0016020; C:membrane; IRA.	GO; GO:0008417; F:fuccsyltr GO; GO:0016757; F:transfers GO; GO:0006486; P:protein e InterPro; IPR001503; Glyco. PAMTHER; PTHR11929; GLyco. Glycosyltransferaes; Transfe SEQUENCE 333 AA; 39154 P	Query Match 13.2%; Score 58; DB 2; Length 333; Best Local Similarity 100.0%; Pred. No. 6.3e-51; Matches 58; Conservative 0; Mismatches 0; Indels 0; Gaps	Qy 224 EFLSQYKFNLCFENSQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDF 	RESULT 2 025366_HELPY ID 025366_HELPY PRELIMINARY; PRT; 476 AA. AC 025366, DT 01-JAN-1998, integrated into UniProtKB/TrEMBL. DT 01-JAN-1998, sequence version 1. DT 01-FEB-2006, entry version 25. DE Pucosyltransferase.
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TIGR; HP0379; -.

GO; GO:0016620; C:membrane; IEA.

GO; GO:0001677; F:fucosyltransferase activity; IEA.

GO; GO:0006757; F:transferase activity, transferring glycosyl. ..; IEA.

GO; GO:0006486; P:protein amino acid glycosylation; IEA.

GO; GO:0006486; P:protein amino acid glycosylation; IEA.

InterPro; IPR001203; Glyco.trans.10.

PANTHER; PTHR11929; Glyco.trans.10; 1.

Complete proteome; Glycosyltransferase; Transferase.

SEQUENCE 425 AA; 49329 MW; 1182AF180D124A34 CRC64;
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.
GO; GO:0006486; F:protein amino acid glycosylation; IEA.
InterPro: IPRO01503; Glyco_trans 10.
PANTHER; PTHR11929; Glyco_trans 10; 1.
Glycosyltransferase; Transferase.
SEQUENCE 478 AA; 56070 MW; ACD47A9C7D2D3266 CRC64;
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Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
STRAIN=26695 / ATCC 700392;
MUEDLINE=97394467; PubMed=9252185; DOI=10.1038/41483;
Tomb J.-F., White O., Kerlawage A.R., Clayton R.A., Sutton G.G.,
Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S.R.,
Dougherty B.A., Nelson K.E., Quackenbush J., Zhou L., Kirkness B.F.,
Peterson S.N., Loftus B.J., Richardson D.L., Dodson R.J., Khalak H.G.,
Glodek A., McKenney K., FitzGerald L.M., Lee N., Adams M.D.,
Hickey E.K., Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D.,
Rathey J.M., Cotton M.D., Weidman J.F., Fujii C., Bowman C.,
Matthey L., Wallin B., Hayes W.S., Borodovsky M., Karp P.D.,
Smith H.O., Fraser C.M., Venter J.C.;
The complete genome sequence of the gastric pathogen Helicobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Helicobacter pylori (Campylobacter pylori).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
                                                                                                                                                                                                                                                                                                                                             239 QGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDY 290
                                                                                                                                                                                                                                                                                                                                                                             242 QGYGYVTEKIIDAYPSHTIPIYWGSPSVAKDFNPKSFVNVHDFKNFDEAIDY 293
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   293 YLHTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYH 343
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                                                                                                                                                                                                                                Length 478;
                                                                                                                                                                                                                                  11.8%; Score 52; DB 2; L4 100.0%; Pred. No. 1.5e-44;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-JAN-1998, integrated into UniProtKB/TrEMBL. 01-JAN-1998, sequence version 1. 07-FEB-2006, entry version 24.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     425 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fucosyltransferase.
OrderedLocusNames=HP0379; ORFNames=HP_0379;
                                                                                                                                                                                                                                                 100.0%; Pred. ....
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Best Local Similarity
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                                                                                                                                                                                                                                     Query Match
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HELPY
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GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0004757; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. .; IEA.
GO; GO:0016466; P:protein amino acid glycosylation; IEA.
Interbro; IPR001503; Glyco_trans_10.
Interbro; IPR001503; Glyco_trans_10; 1.
Complete proteome; Glycosyltransferase.
SEQUENCE 476 AA; 55927 MM; 32BFFDBBD36E1F74 CRC64;
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Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License
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MEDLINE=97407925; PubMed=9261149; DOI=10.1074/jbc.272.34.21357;
Ge Z., Chan N.W.C., Palcic M.M., Taylor D.E.;
"Cloning and heterologous expression of an alphal, 3-fucosyltransferase gene from the gastric pathogen Helicobacter pylori.";
J. Biol. Chem. 272:21357-21363(1997).
                                                                                                                     [1]

WUCLECTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].

STRAIN=26695 / ATCC 700392;

MEDLINE=97394467; PubMed=9252185; DOI=10.1038/41483;

Tomb J.-F., White O., Kerlavage A.R., Clayton R.A., Sutton G.G., Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S.K.,

Pleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S.K.,

Pleischmann R.D., Ketchum K.B., Quackenbush J., Zhou L., Kirkness E.F.,

Peterson S.N., Loftus B.J., Richardson D.L., Dodson R.J., Kalak H.G.,

Glodek A., McKenney K., FitzGerald L.M., Lee N., Adams M.D.,

Hickey E.K., Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D.,

Watley J.M., Cotton M.D., Weidman J.F., Fujii C., Bowman C.,

Watthey L., Wallin E., Hayes W.S., Borodovsky M., Karp P.D.,

Smith H.O., Fraser C.M., Venter J.C.;
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
     Helicobacter pylori (Campylobacter pylori).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "The complete genome sequence of the gastric pathogen Helicobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ch 12.5%; Score 55; DB 2; Length 476; l Similarity 100.0%; Pred. No. 1.1e-47; 55; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-JAN-1998, integrated into UniProtKB/TrEMBL.
01-JAN-1998, sequence version 1.
01-FEB-2006, entry version 26.
Alphai,3-fucosyltransferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AF008596; AAB81031.1; -; Genomic_DNA
GO; GO:0016020; C:membrane; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AE000511; AAD07710.1; -; Genomic_DNA.
PIR; C64601; C64601.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             O30511 HELPY PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nature 388:539-547(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUCLEOTIDE SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TIGR; HP0651; -.
LinkHub; 025366; -.
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Best Local Similarity
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                                                                                                 NCBI_TaxID=210;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Name=fucT;
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Matches

RESULT 3

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Gaps

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glycosyl. . .; IEA.

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Gaps

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MEDLINE=99120557; PubMed=9923682; DOI=10.1038/16495;
Alm R.A., Ling L.-S.L., Moir D.T., King B.L., Brown E.D., Doig P.C.,
Smith D.R., Noonan B., Guild B.C., deJonge B.L., Carmel G.,
Tummino P.J., Caruso A., Uria-Nickelsen M., Mills D.M., Ives C.,
Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E., Vovis G.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Genomic sequence comparison of two unrelated isolates of the human gastric pathogen Helicobacter pylori.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAY-1999, sequence version 1.
21-FEB-2006, entry version 23.
ALPHA (1,3)-FUCOSYLTRANSFERASE.
Name-fucT; ORFNames=1hp_0596;
Helicobacter pylori J99 (Campylobacter pylori J99).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BIOCYCI HPYL85963:JHP0596-MONOMER; -.
BIOCYCI HPYL85963:JHP0596-MONOMER; -.
GO; GO:0016020; C:membrane; IRA.
GO; GO:0008417; F:tucosyltransferase activity; IRA.
GO; GO:0016757; F:transferase activity, transferring glycosyl.
GO; GO:0016486; P:protein amino acid glycosylation; IRA.
InterPro; IRR001503; Glyco trans 10.
PANTHER; PTHR11929; Glyco-trans 10.
COMplete proteome; Glycosyltransferase; Transferase.
SEQUENCE 454 AA; 53448 MM; 3262687131263AB0 CRC64;
                                                                                                                                                                                                         Length 436;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 454;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
GO; GO:0008417; P:fucosyltransferase activity; IEA.
GO; GO:0016757; P:transferase activity, transferring gl,
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IPRO1503; Glyco_trans_10.
PANTHER; PTHR1929; Glyco_trans_10; 1.
Complete proteome; Glycosyltransferase; Transferase.
SEQUENCE 436 AA; 50699 MW; IDB2066AB98FA6IE CRC64;
                                                                                                                                                                                                                                                                                                                                            283 DFKNFDEAIDYVRYLHTHPNAYLDMLYENPLNTLDGKAYFYQ 324
                                                                                                                                                                                                                                                                                                            280 DFKNFDEAIDYVRYLHTHPNAYLDMLYENPLNTLDGKAYFYQ 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              283 DFKNFDEALDYVRYLHTHPNAYLDMLYENPLNTLDGKAYFYQ 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 280 DFKNFDEAIDYVRYLHTHPNAYLDMLYENPLNTLDGKAYFYQ
                                                                                                                                                                                                      9.5%; Score 42; DB 2; Le
100.0%; Pred. No. 3.6e-34;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 42; DB 2; Lo
Pred. No. 3.7e-34;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAY-1999, integrated into UniProtKB/TrEMBL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QSLI3 HELPJ PRELIMINARY; PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Helicobacteraceae; Helicobacter, NCBI_TaxID=85963;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9.58;
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                                                                                                                                                                                                                                                             42; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                42; Conservative
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                                                                                                                                                                                                                                Best Local Similarity
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Matches 42; Conser
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; AV450598; AAR88243.1; -; Genomic_DNA.
GO; GO:0016020; C:membrane; IEA.
GO; GO:001617; F:tucosyltransferase activity; IEA.
GO; GO:0016075; F:tucansferase activity, transferring glycosyl. .; IEA.
GO; GO:0016075; F:transferase activity, transferring glycosyl. .; IEA.
GO; GO:0016075; F:transferase activity, transferring glycosyl. .; IEA.
GO; GO:0016075; F:transferase activity, transferring glycosyl. .; IEA.
Glycosyltransferase; Transferase.
Glycosyltransferase; Transferase.
SEQUENCE 432 AA; 50503 MW; 69D3A32FBD2F12C9 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License
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MEDLINE=99120557; PubMed=9923682; DOI=10.1038/16495;
Alm R.A., Ling L.-S.L., Moir D.T., King B.L., Brown B.D., Doig P.C.,
Smith D.R., Noonan B., Guild B.C., deJonge B.L., Carmel G.,
Tummino P.J., Caruso A., Uria-Nickelsen M., Mills D.M., Ives C.,
Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E., Vovis G.F.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                   Rabbani S., Miksa V., Wipf B., Ernst B.;
"Molecular Cloning and Functional Expression of a Novel Helicobacter
pylori (alpha)-1,4 Fucosyltransferase.";
Glycobiology 15:1076-1083 (2005).
                                                                                                                                                                                 Helicobacter pylori (Campylobacter pylori).
Bacteria, Proteobacteria, Epsilonproteobacteria, Campylobacterales,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-MAY-1999, integrated into UniProtKB/TrEMBL.
01-MAY-1999, sequence version 1.
21-FEB-2006, entry version 23.
ALPHA-(1,3)-FUCOSYLTRANSFERASE.
Name-fucU; ORFNames=jhp_1002;
Helicobacter pylori J99 (Campylobacter pylori J99).
Bacteria, Proteobacteria; Epsilonproteobacteria; Campylobacterales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   "Genomic sequence comparison of two unrelated isolates of the human gastric pathogen Helicobacter pylori.";
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2.2e-39;
                                                      05-JUL-2004, integrated into UniProtKB/TrEMBL.
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100.0%; Pred. No. 2.2e-
       432 AA.
                                                                                                                                                                                                                                                                                                                                                           PubMed=16000696; DOI=10.1093/glycob/cwj004;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9ZKD7 HELPJ PRELIMINARY; PRT; Q9ZKD7;
       Q6ST35 HELPY PRELIMINARY; PRT;
                                                                                 05-JUL-2004, sequence version 1. 07-FEB-2006, entry version 8.
                                                                                                                                                                                                                                Helicobacteraceae; Helicobacter.
NCBI_TaxID=210;
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GO; GO:0016020; C:membrane; IEA.
                                                                                                                                  Alpha-1,4 fucosyltransferase
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Best Local Similarity
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                                                                                                                                                          Name=fucTIII;
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Distributed under the Creative Commons Attribution-NoDerivs License
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Mammalia; Butheria; Buarchontoglires; Glires; Rodentia; Sciurognathi;
Muroidea; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi;
Mammalia, Butheria, Buarchontoglires, Glires, Rodentia, Sciurognathi;
Muroidea, Muridae, Murinae, Mastomys.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=22503854; PubMed=12615004; DOI=10.1016/S0168-9525(03)00021-0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Wontoya-Burgos J.I., Boursot P., Galtier N.; "Recombination explains isochores in mammalian genomes.";
                                                                                                                                                                                  Indels
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                                                                                                                     Length 94;
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94 AA; 10617 MW; 1485630849C1B84F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94 AA; 10617 MW; 1485630849C1B84F CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             UniProtKB/TrEMBL
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100.0%; Pred. No. 2;
ative 0; Mismatches
                                                                                                                     DB 2;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                94 AA.
                                                                                                                     2.0%; Score 9; DB 2
100.0%; Pred. No. 2;
ative 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus cervicolor (Fawn-colored mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001870; B302.
InterPro; IPR003879; Butyrophylin.
InterPro; IPR003877; SPRY_rcpt.
Pfam; PP00622; SPRY; I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-JUN-2003, integrated into Unil
01-JUN-2003, sequence version 1.
07-FEB-2006, entry version 12.
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NON TER 1 1
NON TER 94 94
                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
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                                                                                                                                                                                     9; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Fxy protein (Fragment).
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                                                                                                                                                                                                                                                 194 AFYDALNSI 202
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                                                                                                                                                                                                                                                                                    NUCLEOTIDE SEQUENCE.
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Mastomys huberti.
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Q80Z78;
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QB0Z75 MUSCE
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GO; GO:0016020; C:membrane; IEA.

GO; GO:0008417; F:tucosyltransferase activity; IEA.

GO; GO:0016757; F:tucnsferase activity, transferring glycosyl. . .; IEA.

GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.

GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.

GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.

GO; GO:0016757; F:transferase activity, transferase.

Glycosyltransferase; Transferase.

Glycosyltransferase; Transferase.

Glycosyltransferase; Transferase.

SEQUENCE 462 AA; 54560 MW; BD27F8B351ECE752 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Copyrighted by the Uniprot Consortium, see http://www.uniprot.org/terms
Distributed under the Creative Commons Attribution-NoDerivs License
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Mammalia; Butheria; Buarchontoglires; Glires; Rodentia; Sciurognathi;
Muroidea; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=XBS;
MEDLINE=22503854; Pubmed=12615004; DOI=10.1016/S0168-9525(03)00021-0;
                                                                                                                                                                                                                                                                                                           Rasko D.A., Wang G., Palcic M.M., Taylor D.E.;
"Cloning and characterization of the alpha(1,3/4) fucosyltransferase of Helicobacter pylori.";
Biol. Chem. 275:4988-4994(2000).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                               Helicobacter pylori (Campylobacter pylori).
Bacteria, Froteobacteria, Epsilonproteobacteria, Campylobacterales,
Helicobacteraceae, Helicobacter.
NCBI_TaxID=210,
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                                                                                                                                                                                                                                                                                 MEDLINE=20138242; PubMed=10671538; DOI=10.1074/jbc.275.7.4988;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 462;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rasko D.A., Wang G., Palcic M.M., Taylor D.E.;
Submitted (FEB-2003) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Match 7.3%; Score 32; DB 2; Le Local Similarity 100.0%; Pred. No. 9.6e-24; es 32; Conservative 0; Mismatches 0;
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InterPro; IPR001870; B302.
InterPro; IPR001870; Butyrophylin.
InterPro; IPR003877; SPRY_ropt.
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QBOZ72 MUSMA PRELIMINARY; PRT;
Q8OZ72?
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         Alpha-1,3/4-fucosyltransferase
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=UA948;
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Best Loca Matches

RESULT Q80Z72

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Q810Y0 MUSSI
Q810Y0;
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                                                                                                         Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License
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MEDLINE=22503854; PubMed=12615004; DOI=10.1016/S0168-9525(03)00021-0; MONITON=22503854; PubMed=12615004; DOI=10.1016/S0168-9525(03)00021-0; MONITON-BURGOS J.I.; BOURSOL P., Galtier N.; MRecombination explains isochores in mammalian genomes."; Trends Genet. 19:128-130(2003).
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Mammalia; Butheria; Buarchontoglires; Glires; Rodentia; Sciurognathi;
Muroidea; Cricetidae; Arvicolinae; Arvicola.
#EDLINE=22503854; PubMed=12615004; DOI=10.1016/S0168-9525(03)00021-0;
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                        Montoya-Burgos J.I., Boursot P., Galtier N.;
"Recombination explains isochores in mammalian genomes.";
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                                                                                                                                                                                                                                                                                                                                               94 AA; 10617 MW; 1485630849C1B84F CRC64;
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InterPro; IPR001870; B302.
InterPro; IPR003879; Butyrophylin.
InterPro; IPR003877; SPK_ropt.
Pfam; PF00622; SPKY, 1.
PRINTS; PR01407; BUTYPHINCDUF.
                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 100.0%; Pred. No. 2; Matches 9; Conservative 0; Mismatches
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InterPro; IPR001870; B302.
InterPro; IPR003879; Butyrophylin.
InterPro; IPR003877; SPRY_ropt.
Pfam; PF00622; SPRY; 1.
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                                                              Trends Genet. 19:128-130(2003).
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NON_TER 1 1
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ID Q80ZBS_MUSPL PRELIMINARY;
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Distributed under the Creative Commons Attribution-NoDerivs License
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Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                            Fxy (Fragment).
Mus platythrix (Flat-haired mouse).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Euarchontoglires, Glires, Rodentia, Sciurognathi,
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Buarchontoglires; Glires; Rodentia; Sciurognathi;
Muroidea; Muridae; Murinae; Mus.
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                                                                                                                                                                                                                                                                                                                                                               SIGNALN=114;
MEDLINE=22503854; PubMed=12615004; DOI=10.1016/S0168-9525(03)00021-0;
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01-JUN-2003, integrated into UniProtKB/TrEMBL.
01-JUN-2003, sequence version 1.
07-FBB-2006, entry version 11.
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InterPro; IPR001870; B302.
InterPro; IPR001879; Butyrophylin.
InterPro; IPR003877; SPRY_ropt.
Pfam; PF00622; SPRY; 1.
PRINTS; PR01407; BUTYPHINCDUF.
NON_TER 94 94
SEQUENCE 94 AA; 10587 MW; 123565BEF9C7084
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100.0%; Pred. No. 2;
tive 0; Mismatches
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InterPro; IPR001870; B302.
InterPro; IPR003879; Butyrophylin.
InterPro; IPR003877; SPRY_rcpt.
Pfam; PF00622; SPRY; 1.
PRINTS; PR01407; BUTYPHINCDUF.
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                                                                                                                                                                                                  Muroidea; Muridae; Murinae; Mus
NCBI_TaxID=10101;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Trends Genet. 19:128-130(2003).
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                                                                                                                                                                                                                           30-AUG-2002, integrated into UniProtKB/Swiss-Prot.
01.-Unv-2000, sequence version 1.
07-MAR-2006, entry version 31.
07-MAR-2006, entry version 31.
Midline-1 (Tripartite motif protein 18) (Fragment).
Name=Midl; Synonyms=Fxy, Trim18;
Mus caroli (Wild mouse) (Ricefield mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Butheria; Buarchontoglires; Glires; Rodentia; Sciurognathi;
Muroidea; Muridae; Mus.
NCBI_TaxID=10089;
                                                                                                                                                                                                                                                                                                                                                                                                                                      NUCLEOTIDE SEQUENCE [GENOMIC DNA].
MEDLINE=99439873; PubMed=10508587; DOI=10.1016/S0960-9822(99)80430-8;
Perry J., Ashworth A.;
"Evolutionary rate of a gene affected by chromosomal position.";
Curr. Biol. 9:987-989(1999).
-!- FUNCTION: May have E3 ubiquitin ligase activity which targets the catalytic subunit of protein phosphatase 2 for degradation (By
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           similarity).
-!- SUBUNIT: Homodimer or heterodimer with MID2. Interacts with IGBP1
(By similarity).
-!- SUBCELLULAR LOCATION: Cytoplasmic; microtubule-associated (By
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tive 0; Mismatches 0; Indels
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94 AA; 10617 MW; 1485630849C1B84F CRC64;
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PRINTS; PR01407; BUTYPHINCDUF.
Ligase; Metal-binding; Microtubule; Phosphorylation; Ubl conjugation pathway.
CHAIN 108 Midline-1.
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B30.2-like.
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-!- SIMILARITY: Belongs to the TRIM/RBCC family.
-!- SIMILARITY: Contains 1 B30.2-like domain.
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MGI; MGI:1100537; Midl:
                               Query Match 2.0%; Score 9; DB 2
Best Local Similarity 100.0%; Pred. No. 2;
Matches 9; Conservative 0; Mismatches
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InterPro; IPR003879; Butyrophylin.
InterPro; IPR001877; SPRY rcpt.
InterPro; IRR001841; Znf_RING.
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	115-3 3, Application US/0909231 3, Application US/0909231 INFORMATION: TT TAYLOR, Diane E. TT GG, ZDOUGHAI, 3-FU FERENCE: 07254/049001 FERENCE: 07254/049001 FELING DATE: 1998-06-05 APPLICATION NUMBER: US 60 APPLICATION NUMBER: US 60 FILING DATE: 1997-06-06 PELING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE: 1997-06-06 PERING DATE:	100 Similarity 100 O; Conservative	PLLDAF       PLLDAF	NEPSDLVFGSP             NEPSDLVFGSP	
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APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/733,524A
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR PLILING DATE: 1998-06-05
PRIOR PLILING DATE: 1998-06-05
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
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100.0%; Score 440; DB 2;
Best Local Similarity 100.0%; Pred. No. 0;
Matches 440; Conservative 0; Mismatches 0;
                                                                                      Sequence 3, Application US/09733524A Patent No. 6534298 GENERAL INFORMATION:
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US-09-733-524A-3
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LENGTH: 440
TYPE: PRT
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RESULT 3 85-10-189-977A-3

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Sequence 3, Application US/10189977A
Patent No. 6962806
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/733,524
PRIOR APPLICATION NUMBER: US/09/733,524
PRIOR PELING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1999-06-06
PRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FREEEEFFE FREEEEF FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEEFFE FREEFFE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
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Patent No. 7029891
GENERAL INFORMATION
GENERAL INFORMATION
GENERAL INFORMATION
APPLICANT: Ge, Zhongming
APPLICANT: University of Alberta
TITLE OF INVENTION: Alpha-1,3 Fucosyltransferase
FILE REFERENCE: 017398-000420US
CURRENT APPLICATION NUMBER: US/10/392,098A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 100.0%; Score 440; Dest Local Similarity 100.0%; Pred. No. 0; Matches 440; Conservative 0; Mismatches
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US-10-189-977A-3
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NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 8
LENGTH: 454
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; Sequence 8, Application US/10189977A
; Patent No. 6962806
                      ; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-09-092-315-8
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ORGANISM: Helicobacter pylori
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ORGANISM: Helicobacter pylori
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LENGTH: 454
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; OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpPucT)
US-10-392-098A-3
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APPLICANT: Taylor, Diane B.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALFHA-1, 3-FUCOSYLTRANFERASE
FILE REFERRACE: 07254/049001
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT PILING DATE: 1998-06-05
EARLIER APPLICATION NUMBER: US 60/048,857
EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
             PRIOR APPLICATION NUMBER: US/10/120,319
PRIOR FILING DATE: 2002-04-09
PRIOR PILING DATE: 2002-04-09
PRIOR PILING DATE: 1997-06-06
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SOFTWARE: PATENTIN VET: 2.1
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2003-03-17
                                                                                                                                                                                                                                                                                   TYPE: PRT
ORGANISM: Helicobacter pylori
CURRENT FILING DATE:
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FACENT NO. 0371272

FACENT NO. 0371273

FACENTAL INFORMATION:

APPLICANT: Taylor, Diane R.

APPLICANT: Taylor, Diane R.

TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1, 3

TITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REFERENCE: 07254-049002

CURRENT PAPLICATION NUMBER: US 09/092, 315

PRIOR PAPLICATION NUMBER: US 09/092, 315

PRIOR PILING DATE: 1998-06-05

PRIOR PILING DATE: 1998-06-06

WUMBER OF SEQ ID NOS: 27

SOFTWARE: PASESEQ for Windows Version 4.0
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: G. Zhongming
TITLE OF INVENTION: FUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/10/189, 977A
PRIOR PILING DATE: 2002-03-07
PRIOR PILING DATE: 2000-12-07
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-06
PRIOR PILING DATE: 1997-06-06
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Length 454;
                                                          Indels
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Best Local Similarity 100.0%; Pred. No. 1.5e-48;
Matches 58; Conservative 0; Mismatches 0;
Query Match
13.2%; Score 58; DB 2; L
Best Local Similarity 100.0%; Pred. No. 1.5e-48;
Matches 58; Conservative 0; Mismatches 0;
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US-09-733-524A-5
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TYPE: PRT
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                                                 Query Match 13.2%; Score 58; DB 2; Length 454; Best Local Similarity 100.0%; Pred. No. 1.5e-48; Matches 58; Conservative 0; Mismatches 0; Indels
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Facent No. 7029891

GENERAL INFORMATION:

APPLICANT: Taylor, Diane E.

APPLICANT: Ge, Zhongming

APPLICANT: Ge, Zhongming

APPLICANT: Ge, Zhongming

TITLE OF INVENTION: Alpha-1.3 Fucosyltransferase

TITLE OF INVENTION: Alpha-1.3 Fucosyltransferase

FILE REFERENCE: 017398-0004200S

CURRENT APPLICATION NUMBER: US/10/120,319

PRIOR APPLICATION NUMBER: US/10/120,319

PRIOR PLING DATE: 2002-04-09

PRIOR PLING DATE: 1997-06-06

PRIOR PRILING DATE: 1997-06-06

PRIOR PPLICATION NUMBER: US 09/032,315

PRIOR PRILING DATE: 1998-06-05

PRIOR PRILING DATE: 1998-06-05

PRIOR FILING DATE: 1090-06-05

PRIOR PRILING DATE: 1090-06-05

PRIOR PRILING DATE: 1090-06-05

PRIOR PRILING DATE: 1090-06-05

PRIOR PRILING DATE: 2000-12-07

NUMBER OF SEQ ID NOS: 30

SOFTWARE PARCENTIN Ver. 2.1
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FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1998-06-05
EARLIER APPLICATION NUMBER: US 60/048,857
EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SEQ ID NO 5
SEQ ID NO 5
LENGTH: 476
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ORGANISM: Helicobacter pylori
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APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
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US-10-392-098A-8
US-10-189-977A-8
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Sequence 5, Application US/09733524A

Sequence 5, Application US/09733524A

Patent No. 6534298

GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

TITLE OF INVENTION: PUCCSILE ACIDS ENCODING ALPHA-1, 3

TITLE OF INVENTION: PUCCSILE ACIDS ENCODING ALPHA-1, 3

TITLE OF INVENTION: EVERESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REFERENCE: 07254-049002

CURRENT APPLICATION NUMBER: US/09/733,524A

CURRENT PILING DATE: 1998-06-05

PRIOR FILING DATE: 1998-06-05

PRIOR FILING DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 27

SOFTWARE: FREESEQ for Windows Version 4.0
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APPLICANT: TAYLOr, Diane B.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: NUCLEET ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: PUCCSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/10/189,977A
CURRENT FILING DATE: 2002-03-07
PRIOR FILING DATE: 2002-12-07
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
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Best Local Similarity 100.0%; Pred. No. 1.4e-45;
Matches 55; Conservative 0; Mismatches 0; Indels
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Best Local Similarity 100.0%; Pred. No. 1.4e-45; Matches 55; Conservative 0; Mismatches 0;
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Patent No. 6962806
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ORGANISM: Helicobacter pylori
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293 YLHTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPF 347
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; OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
US-10-392-098A-5
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100.0%; Pred. No. 1.4e-45;
tive 0; Mismatches 0; Indels
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GENERAL NO. //28991.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
APPLICANT: University of Alberta
APPLICANT: University of Alberta
TITLE OF INVENTION: Alpha-1,3 Fucosyltransferase
FILE REFERENCE: 017398-000420US
CURRENT APPLICATION NUMBER: US/10/392,098A
CURRENT APPLICATION NUMBER: US/10/319
PRIOR PLING DATE: 2002-04-09
PRIOR PLING DATE: 1997-06-06
PRIOR FILING DATE: 1997-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR PLING DATE: 1998-06-05
PRIOR PLING DATE: 1998-06-05
PRIOR PLING DATE: 1090-06-05
PRIOR PLING DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SOFTWARE PARENTIN Ver. 2.1
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APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
TITLE PERERNCE: 07254/049001
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1998-06-05
BARLIER APPLICATION NUMBER: US 60/048,857
BARLIER APPLICATION NUMBER: US 60/048,857
BARLIER PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: PASTSEQ for Windows Version 3.0
SEQ ID NO 13
LENGTH: 372
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US-10-392-098A-5
; Sequence 5, Application US/10392098A
...ant No. 7029991
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; Sequence 13, Application US/09092315
; Patent No. 6399337
; GENERAL INFORMATION:
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ORGANISM: Helicobacter pylori
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ORGANISM: Helicobacter pylori
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Best Local Similarity 100.0
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Matches 52; Conserv
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pagence 1, Application US/09733524A

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pagence 1, Application US/09733524A

general inpowarion:
    APPLICANT: Taylor, Diane E.
    APPLICANT: Taylor, Diane E.
    APPLICANT: Ge, Zhongming
    TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3

    TITLE OF INVENTION: EXPERSSING THEM (amended)
    TITLE OF INVENTION: EXPERSSING THEM (amended)
    TITLE OF INVENTION: WUMBER: US/09/733,524A
    CURRENT APPLICATION NUMBER: US/09/733,524A
    CURRENT PILING DATE: 1998-06-05
    PRIOR PILING DATE: 1998-06-06
    PRIOR PILING DATE: 1999-06-06
    NUMBER: US 60/048,857
    PRIOR FILING DATE: 1997-06-06
    NUMBER: OF SEQ ID NOS: 27
    SOFTWARE: FastSEQ for Windows Version 4.0
    SEQ ID NO 1
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                                        Sequence 1. Application US/09092315
Patent No. 639937
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Taylor, Diame B.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE;
FILE REFERENCE: 07254/049001
CURRENT FILLING DATE: 1998-06-05
EARLIER APPLICATION NUMBER: US/09/092,315
GENERAL APPLICATION NUMBER: US 60/048,857
EARLIER PILLING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
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nilarity 100.0%; Pred. No. 1.2e-42;
Conservative 0; Mismatches 0;
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11.8%; Score 52; DB 2; I
Best Local Similarity 100.0%; Pred. No. 1.2e-42;
Matches 52; Conservative 0; Mismatches 0;
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US-09-092-315-1
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ORGANISM: Helicobacter pylori
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Best Local Similarity
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RESULT 14
US-09-092-315-1
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TYPE: PRT
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Best Local Simi
Matches 440;
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3: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US09_PUBCOMB.pep:*
4: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US108_PUBCOMB.pep:*
5: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US108_PUBCOMB.pep:*
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(c) 1993 - 2006 Biocceleration Ltd.
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US-10-120-319-7
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                                         - protein search, using sw model
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; Publication No. US20020164749A1
; General Information.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
; TILL OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
; TILL OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
; FILE REFERENCE: 07254/049001
; CURRENT APPLICATION NUMBER: US/10/120,319
; CURRENT APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/092,315
; PRIOR PILING DATE: EARLIER FILLING DATE: 1998-06-05
; PRIOR PILING DATE: EARLIER FILLING DATE: 1998-06-05
; PRIOR FILING DATE: EARLIER FILLING DATE: 1997-06-06
; NUMBER OF SEQ ID NOS: 22
; SOFTWARE: FastSEQ for Windows Version 3.0
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Publication No. US20030166211A1
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
ITILE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE;
FILE REFERENCE: 07254/049001
CURRENT PILING DATE: 2002-07-03
PRIOR APPLICATION NUMBER: US/09/092,315
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1997-06-06
NUMBER OS SEQ ID NOS: 22
SOFTWARE: FASESEQ for Windows Version 3.0
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ORGANISM: Helicobacter pylori
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Best Local Similarity 100.0
Matches 440; Conservative
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RESULT 3 US-10-392-098-3 2 Sequence 3, Application US/10392098

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GENERAL INFORMATION:

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3

TITLE OF INVENTION: PUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REFERENCE: 07254-049002

CURRENT APPLICATION NUMBER: US/09/733,524A

PRIOR FILING DATE: 2000-12-07

PRIOR FILING DATE: 1998-06-05

PRIOR FILING DATE: 1998-06-05

PRIOR FILING DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 27

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 3

LENGTH: 440

TYPE: PRT
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APPLICANT: Johnson, Karl F.
APPLICANT: Bezila, Daniel James
APPLICANT: Neose Technologies, Inc.
APPLICANT: Governors of the University of Alberta
TITLE OF INVENTION: H. Pylori Fucosyltransferases
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100.0%; Pred. No. 0;
ative 0; Mismatches
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FENERAL INFORMATION: APPLICANT: Simala-Grant, Joanne
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US-10-392-098-3
US20030166212A1
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Matches 440; Conservative
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US-10-764-212-18
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ORGANISM: Helicobacter Pylori fucosyltransferase
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Patent No. US20020068347A1

GENERAL INFORMATION:

APPLICANT: The Governers of the University of Alberta, a Canada Corporation

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

APPLICANT: Taylor, Diane E.

TITLE OF INVENTION: WCLEIC ACIDS ENCODING ALPHA-1,3

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: UNMBER: US/09/733,524

CURRENT APPLICATION NUMBER: 09/092,315

PRIOR PELING DATE: 1998-06-05

PRIOR FILING DATE: 1998-06-06

NUMBER OF SEQ ID NOS: 20

SOFTWARE: PASTSEQ FOR Windows Version 4.0
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                                                                                                                                                              ; FEATURE:
; OTHER INFORMATION: H. pylori strain 802 FutA fucosyltransferase
US-10-764-212-18
                                                                                                                                                                                                                                   100.0%; Score 440; DB 5; Length 440;
100.0%; Pred. No. 0;
tive 0; Mismatches 0; Indels
              CURRENT APPLICATION NUMBER: US/10/764,212
CURRENT FILING DATE: 2004-01-22
NUMBER OF SEQ ID NOS: 81
SEQ ID NO 18
LENGTH: 440
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 FILE REFERENCE: 019957-019400US
                                                                                                                           TYPE: PRT
ORGANISM: Helicobacter pylori
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Best Local Similarity 100.0
Matches 440; Conservative
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LENGTH: 440
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**APPLICANT: The Governments of the University of Alberta, a Canada Corporation APPLICANT: Taylor, Diane E. APPLICANT: Taylor, Diane E. APPLICANT: Taylor, Diane E. APPLICANT: Taylor, Diane E. Taylor, Diane E. Taylor, Diane E. Taylor, Diane E. Taylor, Diane E. Taylor, Diane E. Taylor, Diane E. Taylor, Diane E. Taylor, Diane E. Taylor, Diane E. Taylor, Diane E. COCSTLTRANSFERASES, AND EXPRESSION SYSTEMS FOR MAKING AND TITLE OF INVENTION: EXPRESSING THEM TITLE OF INVENTION: EXPRESSING THEM FILE OF INVENTION NUMBER: US/09/733,524

CURRENT APPLICATION NUMBER: 09/092,315

PRIOR APPLICATION NUMBER: 09/092,315

PRIOR FILING DATE: 1998-06-05

PRIOR FILING DATE: 1998-06-06

NUMBER OF SEQ ID NOS: 20

SOFTWARRE: PASSEQ for Windows Version 4.0
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                                                                                                                                                                                                   Query Match 54.1%; Score 238; DB 3; Length 440; Best Local Similarity 99.5%; Pred. No. 8.5e-220; Matches 438; Conservative 0; Mismatches 2; Indels
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ORGANISM: helicobacter pylori fucosyltransferase
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NAME/KEY: PEPTIDE

LOCATION: (0)...(0)

CTHER INFORMATION: Strain 11637 from NCTC11637
US-09-733-524-18
FEATURE:

NAME/KEY: PEPTIDE

LOCATION: (0)...(0)

JOCATION: (0)...(0)

US-09-733-524-3
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US-09-733-524-15
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                                                                                                              227 BPLSQYKFNLCFENSQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDF 284
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Fublication No. US20020164749A1
Fublication No. US20020164749A1
Fublication No. US20020164749A1
Fublication No. US20020164749A1
Fublication No. US20020164749A1
Fublication No. US20020164749A1
FILER REFERENCE: 07254/04901
FULSER REFERENCE: 07254/04901
CURRENT FILING DATE: 2002-04-09
FRIOR FILING DATE: EARLIER FILING DATE: 1998-06-05
FRIOR FILING DATE: EARLIER FILING DATE: 1998-06-05
FRIOR FILING DATE: EARLIER FILING DATE: 1997-06-06
FRIOR FILING DATE: EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE FREESEQ for Windows Version 3.0
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REPERENCE: 07254/04901
CURRENT APPLICATION NUMBER: US/09/092,315
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-06
PRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
NUMBER OF SEQ ID NOS: 22
SOFTWARE: PastSEQ for Windows Version 3.0
SEQ ID NO 8
LENGTH: 454
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  ch 13.2%; Score 58; DB 3; Lo
1 Similarity 100.0%; Pred. No. 9.9e-47;
58; Conservative 0; Mismatches 0;
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100.0%; Pred. No....
0; Mismatches
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; ORGANISM: Helicobacter pylori
US-10-189-977-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TYPE: PRT
ORGANISM: Helicobacter pylori
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Best Local Similarity
Query Match
Best Local Similarity
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US-10-120-319-8
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Sequence 15, Application US/09733524

Sequence 15, Application US/09733524

Patent No. US20020068347A1

GENERAL INFORMATION:

APPLICANT: The Governers of the University of Alberta, a Canada Corporation

APPLICANT: The Governers of the University of Alberta, a Canada Corporation

APPLICANT: Taylor, Diane B.

APPLICANT: Taylor, Diane B.

APPLICANT: Taylor, Diane B.

TITLE OF INVENTION: PUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND

TITLE OF INVENTION: PUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND

TITLE OF INVENTION: PUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND

TITLE OF INVENTION: PUCOSYLTRANSFERASES

FILE REFERENCE: 07254/049002

CURRENT FILING DATE: 1998-06-05

PRIOR PILING DATE: 1998-06-05

PRIOR PILING DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 20

SOFTHARE: FRASESEQ for Windows Version 4.0

SEQ ID NO 15

LENGTHER: TABLESSED AND SECTION 4.06

SEQ ID NO 15

LENGTHER: TABLESSED AND SECTION 4.06

SEQ ID NO 15
                                                                                    APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/10/392,098
CURRENT FILING DATE: 2003-03-17
PRIOR APPLICATION NUMBER: US/09/733,524A
PRIOR APPLICATION NUMBER: US/09/733,524A
PRIOR APPLICATION NUMBER: US/09/092,315
PRIOR PLING DATE: 1990-06-05
PRIOR FILING DATE: 1990-06-05
NUMBER OF SEQ ID NOSE: 27
SOFTWARE: FRACESEQ for Windows Version 4.0
SEQ ID NOS: 27
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         224 EFLSQYKFNLCFENSQGYGYVTEKIIDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDF 281
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100.0%; Pred. No. 7.9e-44;
tive 0; Mismatches 0;
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Best Local Similarity 100.0%; Pred. No. 9.9e-47;
Matches 58; Conservative 0; Mismatches 0;
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ORGANISM: Helicobacter pylori fucosyltransferase
Sequence 8, Application US/10392098
Publication No. US20030166212A1
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NAME/KEY: PEPTIDE
LOCATION: (0)...(0)
OTHER INFORMATION: Strain 26695A
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ORGANISM: Helicobacter pylori

US-10-392-098-8
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Best Local Similarity 100.0
Matches 55; Conservative
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Zhongming
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Matches 52; Conserv
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US-10-189-977-13
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297 YLHTHPNAYLDMLYENPLNTLDGKAYFYQDLSFKKILDFFKTILENDTIYHNNPF 351
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                                                                                                                                                                  APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07554/04901
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT FILING DATE: 2002-04-09
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/092,315
PRIOR APPLICATION NUMBER: BARLIER PILING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: BARLIER PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
SEQ ID NO 5.
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1 Similarity 100.0%; Pred. No. 7.9e-44;
55; Conservative 0; Mismatches 0; Indels
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FUDICATION: US20030166211A1
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE;
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/10/189, 977
CURRENT PILING DATE: 1998-06-05
FRIOR PILING DATE: 1998-06-05
FRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FABELSEQ for Windows Version 3.0
SSEQ ID NO 5
LENGTH: 476
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100.0%; Pred. No. ...
0; Mismatches
                                                                                                       Sequence 5, Application US/10120319
Publication No. US20020164749A1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM: Helicobacter pylori
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-10-189-977-5
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Best Local Similarity
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Matches
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TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION WUMBER: US/10/392,098
CURRENT FILING DATE: 2001-03-17
FRIOR APPLICATION NUMBER: US/09/733,524A
FRIOR APPLICATION NUMBER: US 09/092,315
FRIOR FILING DATE: 1998-06-05
FRIOR FILING DATE: 1998-06-05
FRIOR FILING DATE: 1998-06-06
NUMBER OF SEQ ID NOSI: 27
SOFTWARE: FRAUSCH TOWN NUMBER: US 00/048,857
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APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/04901
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT FILING DATE: 2002-04-09
FRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/092,315
PRIOR APPLICATION NUMBER: EARLIER APPLICATION NUMBER: US 60/048,857
PRIOR PILING DATE: EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FastSEQ for Windows Version 3.0
: SEQ ID NO 13
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 12.5%; Score 55; DB 4; Length 476; Best Local Similarity 100.0%; Pred. No. 7.9e-44; Matches 55; Conservative 0; Mismatches 0; Indels
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APPLICANT: Taylor, Diane B.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/10/189,977
CURRENT FILING DATE: 2002-07-03
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Publication No. US20020164749A1
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100.0%; Pre
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: PRT
ORGANISM: Helicobacter pylori
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM: Helicobacter pylori
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Search completed: August 11, 2006, 20:16:19 Job time : 107.23 secs

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100767,
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3312, Ap
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58709, A
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63557, A
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1771.230 Million cell updates/sec
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/EMC_Celerra_SIDS3/ptodata/2/pubpaa/US06_NEW_PUB.pep:*
/EMC_Celerra_SIDS3/ptodata/2/pubpaa/US07_NEW_PUB.pep:*
/EMC_Celerra_SIDS3/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
/EMC_Celerra_SIDS3/ptodata/2/pubpaa/US08_NEW_PUB.pep:*
/EMC_Celerra_SIDS3/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
/EMC_Celerra_SIDS3/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
/EMC_Celerra_SIDS3/ptodata/2/pubpaa/US10_NEW_PUB.pep:*
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                                                                                        August 11, 2006, 20:11:06; Search time 16.7213 Seconds
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            GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
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US-10-449-902-31893
US-110-56-355B-15997
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US-110-56-355B-15996
US-110-56-355B-15996
US-110-56-355B-15996
US-110-56-355B-15007
US-110-56-355B-15007
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                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                         Published Applications AA New:*
                                                                                                                                                                                                                                          239914 seqs, 67312017 residues
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                                                               OM protein - protein search, using sw model
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                                                                                                                                                                                                              Gapop 60.0 , Gapext 60.0
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Maximum DB
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26 7 1.6 469 7 US-11-056-355B-8574 Sequence 8574, Ap 27 1.6 469 7 US-11-056-355B-17428 Sequence 17428, A 28 7 1.6 471 7 US-11-056-355B-17429 Sequence 17428, A 30 7 1.6 471 7 US-11-056-355B-17427 Sequence 17427, Ap 29 7 1.6 477 7 US-11-056-355B-17427 Sequence 17427, Ap 31 7 1.6 496 6 US-10-953-349-3310 Sequence 17427, Ap 32 7 1.6 508 7 US-11-056-355B-8572 Sequence 8572, Ap 34 7 1.6 508 7 US-11-056-355B-872 Sequence 8708, Ap 35 7 1.6 516 6 US-10-953-349-31462 Sequence 69280, Ap 37 7 1.6 516 6 US-10-953-349-31461 Sequence 69280, Ap 38 7 1.6 545 7 US-11-056-355B-69280 Sequence 69279, Ap 38 7 1.6 578 6 US-10-449-902-50578 Sequence 50578, Ap 40 7 1.6 578 6 US-10-449-902-50578 Sequence 50578, Ap 41 7 1.6 578 6 US-10-449-902-50578 Sequence 50578, Ap 42 7 1.6 593 6 US-10-449-902-50578 Sequence 69280, Ap 43 7 1.6 615 6 US-10-519-335-6 Sequence 69280, Ap 44 7 1.6 625 6 US-10-519-335-4 Sequence 6, Appli 44 7 1.6 625 6 US-10-519-335-4 Sequence 54865, Appli 45 7 1.6 625 6 US-10-449-902-54865 Sequence 54865, Appli 50578, Appli 50578, Appli 60578, `

### ALIGNMENTS

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US-11-289-102-250

US-11-289-102-250

Publication No. US2006012511A1

Sequence 250, Application US/11289102

Publication No. US2006012511A1

APPLICANT: Get Hyerim

APPLICANT: Get Hyerim

APPLICANT: Glast, Edwin

APPLICANT: Glast, Edwin

APPLICANT: Glast, Edwin

APPLICANT: Glast, Edwin

APPLICANT: Glast, Edwin

APPLICANT: Glast, Edwin

TITLE OF INVENTION: UNCOTBOLE-STABILIZING AGENTS

FILE REPERENCE: 1038 NO.

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APPLICANT: Brover, Vyacheslav
APPLICANT: Brover, Vyacheslav
APPLICANT: Brover, Vyacheslav
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polygeptides Encoded Thereby
FILE REFERENCE: 2750-1590F0US2
CURRENT APPLICATION NUMBER: US/11/056,355B
CURRENT FILING DATE: 2005-02-14
PRIOR FILING DATE: 2004-02-13
NUMBER OF SEQ ID NOS: 119966
SEQ ID NO 15997
LENGTH: 270
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                                                                                                                                                                                                                                                         RESULT 5
US-11-066-355B-67711
; Sequence 67711, Application US/11056355B
; Publication No. US20060150283A1
; GENERAL INFORMATION:
; APPLICANT: Brover, Vyacheslav
; APPLICANT: Alexandrov, Mickolai
; TITLE OF INVENTION: Sequence Determined DNA Fragment;
; TITLE OF INVENTION: Polypeptides Encoded Thereby
; FILE REFERENCE: 2750-1590F082
; CURRENT APPLICATION NUMBER: US/11/056,355B
; CURRENT FILING DATE: 2005-02-14
; PRIOR FILING DATE: 2004-02-13
; NUMBER OF SEQ ID NOS: 119966
; SEQ ID NO 67711
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OTHER INFORMATION: Ceres Seq. ID no. 12407516
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OTHER INFORMATION: Ceres Seq. ID no. 13595883
   Mismatches
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ORGANISM: Zea mays subsp. mays
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ORGANISM: Triticum aestivum
7; Conservative
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Publication No. US20060107345A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: ALEXANDROW, Nickolai et al.
TITLE OF INVENTION: SEQUENCE-DETERNINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
TITLE OF INVENTION: ENCONDED THERBY
TITLE OF INVENTION: ENCONDED THERBY
TITLE OF INVENTION: ENCONDED THERBY
CURRENT APPLICATION WNDER: US/10/953,349
CURRENT PILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: Patentin version 3.3
SEQ ID NO 2656
LENGTH: 259
TYPE: PRT
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Sequence 47233, Application US/10449902
GENERAL INFORMATION:
APPLICANT: National Institute of Agrobiological Sciences.
APPLICANT: Bio-oriented Technology Research Advancement Institution.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: Foundation for Advancement of International Science.
TITLE OF INVENTION: FULL-LENGTH PLANT cDNA AND USES THEREOF
FILE REPERENCE: MOA-A02051-US
CURRENT APPLICATION NUMBER: US/10/449, 902
CURRENT FILING DATE: 2003-05-29
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 238;
                                                                                                                                                                                                                                                                                                                                           1.6%; Score 7; DB 6; Length 238;
100.0%; Pred. No. 52;
vative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Indels
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1.6%; Score 7; DB 6
Best Local Similarity 100.0%; Pred. No. 52;
Matches 7; Conservative 0; Mismatches
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PRIOR FILING DATE: 2002-50-30
PRIOR APPLICATION NUMBER: JP 2002-383870
PRIOR PILING DATE: 2002-111
   PRIOR FILING DATE: 2002-12-11
NUMBER OF SEQ ID NOS: 56791
SOFTWARE: PATENTIN VET. 2.1
SEQ ID NO 31893
LENGTH: 238
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SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 47233
LENGTH: 238
                                                                                                                                                                                                                                                                                                                                                                                      Best_Local Similarity 100.
Matches 7; Conservative
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US-10-449-902-47233
                                                                                                                                                                                                                                  ORGANISM: Oryza sativa
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Sequence 15996, Application US/11056355B
; Publication No. US20060150283A1
; GENERAL INFORMATION:
; APPLICANT: Brover, Vyacheslav
; APPLICANT: Alexandrov, Nickolai
; TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
; TITLE OF INVENTION: Polypeptides Encoded Thereby
; FILE REFERENCE: 2750-1590FUG2
; CURRENT APPLICATION NUMBER: US/11/056,355B
; CURRENT FILING DATE: 2005-02-14
; PRIOR APPLICATION NUMBER: 60/544,190
; PRIOR PILING DATE: 2004-02-13
; NUMBER OF SEQ ID NOS: 119966
; SEQ ID NO 15996
         APPLICANT: Bio-oriented Technology Research Advancement Institution.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: Poundation for Advancement of International Science.
TITLE OF INVENTION: FULL-LENGTH PLANT CDNA AND USES THEREOF FILE REFRENCE: MOA-A0205Y1-US
CURRENT APPLICATION NUMBER: US/10/449,902
CURRENT PAPLICATION NUMBER: US/2002-203269
PRIOR PALING DATE: 2003-05-30
PRIOR PLING DATE: 2002-05-30
PRIOR PALING DATE: 2002-12-11
NUMBER OF SEQ ID NOS: 56791
SOFTWARE: PetentIn Ver. 2.1
SEQ ID NO 46731
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National Institute of Agrobiological Sciences.
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CTHER INFORMATION: Xaa is any aa, unknown or other US-11-056-3558-15996
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LOCATION: (1)..(334)
OTHER INFORMATION: Ceres Seq. ID no. 12407515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 1.6%; Score 7; DB & Best Local Similarity 100.0%; Pred. No. 70; Matches 7; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1.6%; Score 7; DB 7
100:0%; Pred. No. 71;
tive 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: prt
ORGANISM: Zea mays subsp. mays
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Best Local Similarity 100.
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT
CORGANISM: Oryza sativa
US-10-449-902-46731
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              418 HKAYHKS 424
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Publication No. US20060107345A1
GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
TITLE OF INVENTION: ENCONDED THERBY
FILE REFERENCE: 2750-1579PUS2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILEM DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: Patentin version 3.3
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Sequence 67710, Application US/11056355B

Sequence 67710, Application US/11056355B

SENERAL INCORMATION:

APPLICANT: Brover, Vyachoslav

APPLICANT: Brover, Vyachoslav

TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding

TITLE OF INVENTION: Polypeptides Encoded Thereby

FILE REPERBUCE: 2750-1590FUG2

CURRENT APPLICATION NUMBER: US/11/056,355B

CURRENT FILING DATE: 2005-02-14

PRIOR APPLICATION NUMBER: 60/544,190

PRIOR FILING DATE: 2004-02-13

NUMBER OF SEQ ID NOS: 119966

SEQ ID NO 67710
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3. 60;
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100.0%; Pred. No. 60;
tive 0; Mismatches
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: LOCATION: (1)..(276)
: OTHER INFORMATION: Ceres Seq. ID no. 13595882
US-11-056-3558-67710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 1.6%; Score 7; DB (Best Local Similarity 100.0%; Pred. No. 60; Matches 7; Conservative 0; Mismatches
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Publication No. US20060123505A1
GENERAL INFORMATION:
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Best Local Similarity 100.0%
Matches 7; Conservative
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ORGANISM: Triticum aestivum
                        312 TLDGKAY 318
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                                                                     49 TLDGKAY 55
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LENGTH: 276
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312 TLDGKAY 318
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     CURRENT FILING DATE:
                                                                                                                                                                                                FEATURE:
NAME/KEY: peptide
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US-11-056-355B-112006
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Sequence 112007, Application US/11056355B

PUBLICATION NO. US20060150283A1

GENERAL INFORMATION:
APPLICANT: Brover, Vyacheslav
APPLICANT: Brover, Wyacheslav
APPLICANT: Brover, Wyacheslav
APPLICANT: Brover, Wyacheslav
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REFERENCE: 2750-1590PUS2
CURRENT APPLICATION NUMBER: US/11/056,355B
CURRENT FILING DATE: 2005-02-14
PRIOR PRICK APPLICATION NUMBER: 60/544,190
PRIOR PRICK APPLICATION NUMBER: 60/544,190

PRIOR PRICK OF 119966
SEQ ID NOS: 119966

ENGINE APPLICATION NUMBER: 50/544,190
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US-11-056-355B-15995
US-11-056-355B-15995
Sequence 15995, Application US/11056355B
Publication No. US20060150283A1
GENERAL INFORMATION:
APPLICANT: Brover, Vyacheslav
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REFERENCE: 2750-1590PUS2
CURRENT APPLICATION NUMBER: US/11/056,355B
CURRENT FILING DATE: 2005-02-14
PRIOR APPLICATION NUMBER: 60/544,190
PRIOR FILING DATE: 2004-02-13
NUMBER OF SEQ ID NOS: 119966
SEQ ID NO 100768
LENGTH: 339
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100.0%; Pred. No. 72;
tive 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                                                                                              ; NAME/KEY: peptide
; LOCATION: (1)..(339)
; OTHER INFORMATION: Ceres Seq. ID no. 13606035
US-11-056-355B-100768
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OTHER INFORMATION: Ceres Seq. ID no. 13606035
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CURRENT APPLICATION NUMBER: US/11/056,355B
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ORGANISM: Arabidopsis thaliana
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ORGANISM: Arabidopsis thaliana
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1es 7; Conservative
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APPLICANT: Brover, Vyacheslav

APPLICANT: Alexandrov, Nickolai

TITIE OF INVENTION: Sequence Determined DNA Fragments and Corresponding

TITIE OF INVENTION: Sequence Determined DNA Fragments and Corresponding

TITIE OF INVENTION: Sequence Determined DNA Fragments and Corresponding

TITIE OF INVENTION: Solotopeptides Encoded Thereby

FILE REFERENCE: 2750-1590F025.

CURRENT FILING DATE: 2005-02-14

PRIOR APPLICATION NUMBER: 60/544,190

PRIOR APPLICATION NUMBER: 60/544,190

PRIOR PRIOR FILING DATE: 2004-02-13

NUMBER OF SEQ ID NOS: 119966

SEQ ID NO 100767

INDICTH: 358
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Publication No. US20060150283A1
GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Brover, Vyacheslav
APPLICANT: Brover, Vyacheslav
APPLICANT: Brover, Vyacheslav
APPLICANT: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
FILE REFERENCE: 2750-1590PGUS
CURRENT APPLICATION NUMBER: 2012-14
CURRENT FILING DATE: 2005-02-14
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                                                                                                                                                                                                                                                                                                            ; NAME/KEY: misc feature
; LOCATION: (324)
; OTHER INFORMATION: Xaa is any aa, unknown or other
US-11-056-3558-15995
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100.0%; Pred. No. 76;
tive 0; Mismatches
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; Sequence 100767, Application US/11056355B
; Publication No. US20060150283A1
PRIOR APPLICATION NUMBER: 60/544,190 PRIOR FILING DATE: 2004-02-13 NUMBER OF SEQ ID NOS: 119966 SEQ ID NO 15995 LENGTH: 357
                                                                                                                                    TYPE: prt
ORGANISM: Zea mays subsp. mays
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: prt
ORGANISM: Arabidopsis thaliana
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Best Local Similarity 100.
Matches 7; Conservative
                                                                                                                                                                                                                                         LOCATION: (1)..(357)
OTHER INFORMATION: Ceres
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## PRIOR APPLICATION NUMBER: 60/544,190
| PRIOR FILING DATE: 2004-02-13
| NUMBER OF SEQ ID NOS: 119966
| SEQ ID NO 112006
| LENGTH: 358
| TYPE: prt | TYPE: prt |
| ORCHER: | PRATICE: |
| NAME/KEY: peptide |
| LOCATION: (1) .. (358) |
| OTHER INFORMATION: Ceres Seq. ID no. 13606034 |
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Search completed: August 11, 2006, 20:17:17 Job time: 17.7213 sec8

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GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
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OM protein - protein search, using sw model

August 11, 2006, 19:53:30 ; Search time 120.966 Seconds Run on:

(without alignments) 1723.552 Million cell updates/sec

US-10-764-212-20

456 1 MFQPLLDAFIDSTHLDETTH......TSFKIYRKAYQKSLPLLRAI 456 Perfect score: Sequence:

OLIGO Gapop 60.0 , Gapext 60.0 Scoring table:

2589679 segs, 457216429 residues Searched:

Word size :

2589342 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

geneseqp1990s:\*geneseqp2000s:\* geneseqp1980s:\* Genesed 8:\* Database

geneseqp2003as:\* geneseqp2003bs:\* geneseqp2001s:\* geneseqp2002s:\* geneseqp2004s:\* geneseqp2005s:\* Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

geneseqp2006s:\*

# SUMMARIES

|   | Description           | Aeb70149 Helicobac | Aeb70154 H. pylori | Aeb70211 Helicobac | He       |          | _        | Adj27355 Alpha-1,3 |          |          | Hel      |          | Adj77812 Helicobac | Adj27347 Alpha-1,3 |          | 7        | 9 He]    | He       | Ξ        | Abg30882 H. pylori |          |          | 'n       | Adj77810 Helicobac |
|---|-----------------------|--------------------|--------------------|--------------------|----------|----------|----------|--------------------|----------|----------|----------|----------|--------------------|--------------------|----------|----------|----------|----------|----------|--------------------|----------|----------|----------|--------------------|
|   | Ĺ                     | AEB70149           | AEB70154           | AEB70211           | ABU52257 | ABG30885 | ADJ77820 | ADJ27355           | AEB70141 | ABG30884 | AEB70145 | AEB70195 | ADJ77812           | ADJ27347           | AEB70133 | ABG30887 | ABG32639 | ABU51151 | AEB70190 | ABG30882           | ADJ77814 | ADJ27349 | AEB70135 | ADJ77810           |
|   | DB                    | 6                  | σ                  | σ                  | ß        | ഗ        | œ        | œ                  | σ        | Ŋ        | σ        | 0        | 80                 | œ                  | σ        | S        | S        | S        | 6        | Ŋ                  | 8        | œ        | σ        | œ                  |
|   | Query<br>Match Length | 456                | 227                | 559                | 418      | 424      | 425      | 425                | 425      | 476      | 446      | 391      | 432                | 432                | 432      | 454      | 49       | 169      | 171      | 485                | 485      | 485      | 485      | 486                |
| æ | Query<br>Match        | 100.0              | 44.1               | 44.1               | 14.9     | 14.9     | 14.9     | 14.9               | 14.9     | 14.9     | 11.0     | 10.1     | 10.1               | 10.1               | 10.1     | 9.0      | 8.6      | 8.6      | 8.6      | 8.6                | 8.6      | 9.8      | 8.6      | 8.6                |
|   | Score                 | 456,               | 201                | 201                | 68       | 68       | 68       | 68                 | 68       | 68       | 20       | 46       | 46                 | 46                 | 46       | 41       | 39       | 39       | 39       | 39                 | 39       | 39       | 39       | 39                 |
| , | Result<br>No.         | 1                  | 7                  | m                  | 4        | S        | 9        | 7                  | 80       | o,       | 10       | 11       | 12                 | 13                 | 14       | 15       | 16       | 17       | 18       | 19                 | 20       | 21       | 22       | 23                 |

|            | Aeb70131 Helicobac | Aeb70212 Helicobac | Aeb70197 H. pylori | Aab10737 H. pylori |            | Aeb70147 Helicobac | Aaw86008 Helicobac | _          | Abu51720 Helicobac | Aeb70202 H. pylori |            | Aeb70205 H. pylori | Aeb70199 H. pylori | Adj77816 Helicobac | Adj27351 Alpha-1,3 |            | Abg30883 H. pylori |            | Abu51590 Helicobac |            | Adj77818 Helicobac |
|------------|--------------------|--------------------|--------------------|--------------------|------------|--------------------|--------------------|------------|--------------------|--------------------|------------|--------------------|--------------------|--------------------|--------------------|------------|--------------------|------------|--------------------|------------|--------------------|
| 8 ADJ27345 | 9 AEB70131         | 9 AEB70212         | 9 AEB70197         | 3 AAB10737         | 5 ABU51565 | 9 AEB70147         | 2 AAW86008         | 5 ABG30886 | 5 ABU51720         | 9 AEB70202         | 9 AEB70201 | 9 AEB70205         | 9 AEB70199         | 8 ADJ77816         | 8 ADJ27351         | 9 AEB70137 | 5 ABG30883         | 5 ABG30881 | 5 ABU51590         | 9 AEB70193 | 8 ADJ77818         |
| 8.6 486    | 8.6 486            | 8.6 545            | 7.9 377            | 7.7 35             | 7.0 89     | 7.0 440            | 7.0 464            | 7.0 479    | 6.4 146            | 6.4 247            |            | 6.1 247            |                    | _                  | 6.1 277            | 6.1 277    | 6.1 440            | 6.1 501    | 5.9 68             | 5.5 231    | 5.0 92             |
| 39         | 39                 | 39                 | 36                 | 35                 | 32         | 32                 | 32                 | 32         | 53                 | 53                 | 28         | 28                 | 28                 | 28                 | 28                 | 28         | 28                 | 28         | 27                 | 25         | 23                 |
| 24         | 25                 | 56                 | 27                 | 28                 | 29         | 30                 | 31                 | 32         | 33                 | 34                 | 35         | 36                 | 37                 | 38                 | 39                 | 40         | 41                 | 42         | 43                 | 44         | 45                 |

#### ALIGNMENTS

New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids. Helicobacter pylori fucosyl transferase, FutA, protein, SEQ ID NO: 20. Bezila DJ; Fucosyltransferase; protein production; enzyme Johnson KF, AEB70149 standard; protein; 456 AA. Helicobacter pylori; strain 948. (NEOS-) NEOSE TECHNOLOGIES INC. (UYAL-) UNIV ALBERTA. 22-JAN-2004; 2004US-00764212. 22-JAN-2004; 2004US-00764212. Simala-Grant J, Taylor D, (first entry) WPI; 2005-521417/53. N-PSDB; AEB70148. US2005164338-A1. 06-OCT-2005 28-JUL-2005. AEB70149; 

The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose readiue from a donor substrate to an acceptor substrate. The fucosyltransferase polymucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein. Claim 2; SEQ ID NO 20; 97pp; English.

Sequence 456 AA;

Query Match

Length 456; DB 9; 100.0%; Score 456;

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49 FILKQRYKIILHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAI 98 FILKÇRYKIILHSNPNEPSDLVFGNPLEQARKILSYQNTKRVFYTGENEVPNFNLFDYAI GPDBLDFNDRYLRMPLYYAYLHYKAMLVNDTTSPYKLKALYTLKKPSHKFKENHPNLCAL 218 IHNESDPWKRGFASFVASNPNAPIRNAFYDALMAIEPVASGGSVKNTLGYKVKNKNEFLS 277

OYKFNLCFENSOGYGYVTEKI 249 

229 278

IHNESDPWKRGFASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLS

169

109

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New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                                                       Bezila DJ;
                                                 Misc-difference 414. .415
/note= "Encoded by TGATGA"
Misc-difference 421. .422
/note= "Encoded by TGATGA"
                                                                                                                  by TGATGA
                                                                                                                                                                                                                                                                                                                                                                                                                        Johnson KF,
                          'note= "Encoded by TGA"
                                                                                                                                    'note= "Encoded by TGA"
         'note= "Encoded by TGA"
                                                                                                                                                                       by TAA"
                                                                                                                                                                                         by TAA"
                                                                                                                                                                                                           'note≈ "Encoded by TAA"
                                                                                                                                                                                                                             by TAA"
                                                                                                                                                                                                                                              'note= "Encoded by TAA"
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                                                                                                                                                                                                                                                                                                   /note= "Encoded by TAA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example 4; SEQ ID NO 22; 97pp; English.
                                            'note= "Encoded by
                                                                                                note= "Encoded by
                                                                                                                                                      β
                                                                                                          28. .429
note= "Encoded
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                                                                                                                                                                                                                                                                                                                                                                                            NEOSE TECHNOLOGIES INC
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                                                                                                                                                                                                                    Misc-difference 514
                                                                                                                                             Misc-difference 454
                                                                                                                                                               Misc-difference 475
                                                                                                                                                                                 Misc-difference 495
                                                                                                                                                                                                   Misc-difference 509
Misc-difference 396
                                                                                                                                                                                                                                     Misc-difference 520
                                                                                                                                                                                                                                                                         Misc-difference 549
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                                    Misc-difference
                 Misc-difference
                                                                                                          Misc-difference
                                                                                                                           Misc-difference
                                                                                                                                                                                                                                                       Misc-difference
                                                                                        Misc-difference
                                                                                                                                                                                                                                                                                                                      US2005164338-A1
                                                                                                                                                                                                                                                                                                                                       28-JUL-2005
                                                                                                                                                                                                                                                                                                                                                                                            (NEOS-)
(UYAL-)
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Protein-protein interaction; ulcer; selected interacting domain; SID.

Helicobacter pylori

WO200266501-A2.

29-AUG-2002

Labigne A;

De Reuse H,

Œ,

Colland

WPI; 2002-674910/72

N-PSDB; ABX67002

(HYBR-) HYBRIGENICS. (INSP ) INST PASTEUR Legrain P, Rain J,

28-DEC-2001; 2001WO-EP015428. 02-JAN-2001; 2001US-0259302P.

Helicobacter pylori selected interacting domain (SID) protein #1601.

(first entry)

07-MAY-2003

ABU52257;

ABU52257 standard; protein; 418 AA.

RESULT 4 ABU52257

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The invention describes a complex of protein-protein interactions in Helicobacter pylori selected from 421 complexes given in the specification. The complex of protein-protein interactions are useful for screening for agents which modulate the interaction of proteins. Modulating compounds which binds to a targeted bacterial protein may be used for treating or preventing ulcers in a human or animal. This is the amino acid sequence of a selected interacting domain (SID), identified via protein-protein interactions. Where the patent number printed at the top of the pages in the specification has obscured areas of protein sequence, the indexer has replaced the residue with an X to
                                                                                                                                                                                                                                                                                                                                                                                                            complexes of protein-protein interactions in Helicobacter pylori, ul for identifying modulating compounds for treating or preventing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 418;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ch 14.9%; Score 68; DB 5; Length 416
1 Similarity 100.0%; Pred. No. 7.8e-60;
68; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Claim 6; Page 479; 642pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             represent an illegible residue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
Matches 68; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                             ulcers in mammals.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 418 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                             useful
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termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polymicleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein. Note: The present sequence is the SEQ ID NO: 22 which is shown in the example 4 (figure 21) of the specification. This sequence differs from the SEQ ID

NO: 22 given in the sequence listing

The present invention provides alpha-1,3/4-fucosyltransferase (also

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225 EFLSQYKFULCFENSQCYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN 284

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Gaps

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44.1%; Score 201; DB 9; Length 559; ilarity 100.0%; Pred. No. 8.8e-195; Conservative 0; Mismatches 0; Indels

Query Match Best Local Similarity Matches 201; Conserval

Sequence 559 AA;

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CC The invention relates a puritied transmembrane segment-Tree alpha 1,3-

CHOCOSYLTRANSFERS A PLYT, where X 1, X 2 and X 4 is Asp or Asn; and X 3 is

CLU-Arg X.3 X 4-Tyr, where X 1, X 2 and X 4 is Asp or Asn; and X 3 is

CLIG, Val or Ala. Also included are the nucleic acid encoding the protein

(including its complement or fragment), a vector containing the protein

(including its complement or fragment), a vector, an antibody which

acid, a host cell containing nucleic acid or vector, an antibody which

comprising a host cell modified with the nucleic acid or its

comprising a host cell modified with the nucleic acid or its

comprising a host cell modified with the nucleic acid or its

comprising a host cell with a substrate such as LacNAc-R and GDP-fucose,

contacting the protein with a substrate such as LacNAc-R and GDP-fucose,

and purifying the produced oligosaccharides, or by culturing the cell,

contacting the host cell with a substrate, to produce oligosaccharides

and purifying the brokenined oligosaccharides. The nucleic acid is useful

as a probe for detecting the nucleic acid, by contacting a sample with a

nucleic acid probe that hybridises to alphal 3-fucosyltransferase

contacting the nucleic acid using polymerase chain reaction (FCR). The

polynucleotide, and detecting hybridisation of the probe; or by

contacting the nucleic acid using polymerase chain reaction of the

contact operably linked to a polynucleotide encoding a desired polypeptide

contacting the protein in a sample. The presence of the protein of the fusion protein. By growing the host cell containing a

covector operably linked to a polynucleotide encoding a desired polypeptic

contecting the protein in a sample. The presence of the protein or the presence of malignant cells. The antibody is also useful for diagnosing disorders

contacting disease, and for inhibiting abnormal alphal, 3-

contacting disease, and for inhibiting abnormal alphal, 3-

contacting the protein in detering the protein in the sample at infection by the nuc
221 EFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN 280
                                                                                                                                                                                                                                                                                                                                                                                                          Enzyme; fucT; alphal,3 fucosyltransferase; oligosaccharide; Lex; Ley;
sLex; Helicobacter pylori infection; malignant cell; mammalian tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The invention relates a purified transmembrane segment-free alpha 1,3-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            segment-free alphal, 3-fucosyltransferase producing fucosylated oligosaccharides.
                                                                                                                                                                                                                                                                                                                                                             H. pylori alphal, 3 fucosyltransferase #5.
                                                                                                                                                                                                    ABG30885 standard; protein; 424 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Helicobacter pylori; strain 26695B.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Example 3; Fig 6; 37pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-DEC-2000; 2000US-00733524
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-00092315
                                                                                                                                                                                                                                                                                             (revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Purified transmembrane polypeptide useful for
                                        FDEAIDYI 292
                                                                                     281 FDEALDYI 288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (UYAL-) UNIV ALBERTA
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21-OCT-2002
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Taylor DE,
                                          285
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This invention relates to novel isolated polynucleotides and the encoded polypeptides thereof, which are related to the fucosyltransferase enzymes (PutA and PutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycoproteins and glycolipids with the desired oligosaccharide moieties (i.e. by transfer of a fucose residue to N-acetylglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial fucosyltransferase is unaffected by the sialyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, bacterially expressed enzymes offer a large cost saving relative to mammalian expression systems. This polypeptide sequence is an H. pylori strain 26695 FutA protein sequence of the invention.
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                                                                                                                                                                                                                                228 EFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN 287
the protein or cell are useful in the development of assays to detect mammalian tumours. The present sequence represents an H. pylori alphal, 3 fucosyltransferase encdoed by the fucT gene. (Updated on 29-AUG-2003 to standardise OS field)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New isolated polynucleotide encoding fucosyltransferase protein, useful for synthesizing oligosaccharide moiety on a protein or lipid that is unglycosylated in its native form or for synthesizing glycolipids.
                                                                                                                                                                                                             225 BFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Puth, PutB, alpha 1-3/4 fucosyltransferase, glycoprotein, glycolipid,
fucose, N-acetylglucosamine, glycoconjugate, enzyme.
                                                                                                                                                                         Gaps
                                                                                                                                                                           ö
                                                                                                                                     Length 424;
                                                                                                                                                                         0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Helicobacter pylori strain 26695 FutA protein SeqID 12.
                                                                                                                                   14.9%; Score 68; DB 5; L. 100.0%; Pred. No. 7.9e-60; ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Claim 12; SEQ ID NO 12; 72pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                ADJ77820 standard; protein; 425 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (NEOS-) NEOSE TECHNOLOGIES INC
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  23-JUL-2003; 2003WO-US023057.
                                                                                                                           Query Match
Best Local Similarity 100.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Johnson KF, Bezila DJ;
                                                                                                                                                                                                                                                                                     285 FDEAIDYI 292
                                                                                                                                                                                                                                                                                                                         288 FDEAIDYI 295
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N-PSDB; ADJ77819.
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                                                                                                    Sequence 424 AA;
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Query Match

ADJ27355

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termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polymucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycoligids. The present sequence is Helicobacter pylori fucosyltransferase protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   225 EFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN 284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        228 EFLSQYKFULCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                                                                                                                                             Helicobacter pylori fucosyl transferase, FutA, protein, SEQ ID NO: 12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Enzyme, fucT, alphal,3 fucosyltransferase, oligosaccharide, Lex; Ley;
sLex; Helicobacter pylori infection; malignant cell; mammalian tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              The present invention provides alpha-1,3/4-fucosyltransferase (also
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 425;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            14.9%; Score 68; DB 9; Length 425
100.0%; Pred. No. 8e-60;
ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bezila DJ
                                                                                                                                                                                                                  Fucosyltransferase; protein production; enzyme.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       H. pylori alphal, 3 fucosyltransferase #4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Johnson KF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 1; SEQ ID NO 12; 97pp; English
                                                                       AEB70141 standard; protein; 425 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ABG30884 standard; protein; 476 AA.
                                                                                                                                                                                                                                                      Helicobacter pylori; strain 26695.
                                                                                                                                                                                                                                                                                                                                                                                                                                         (NEOS-) NEOSE TECHNOLOGIES INC
                                                                                                                                                                                                                                                                                                                                                                 22-JAN-2004; 2004US-00764212
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Simala-Grant J, Taylor D,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     68; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FDEAIDYI 295
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                          UNIV ALBERTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2005-521417/53.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 425 AA;
                                                                                                                                                                                                                                                                                          US2005164338-A1
                                                                                                                                             06-OCT-2005
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21-OCT-2002
                                                                                                         AEB70141;
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                                   RESULT 8
AEB70141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 9
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                                                                       284
                                                                                                           287
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate and acceptor substrate on glycoprotein.
                                                                                          225 EFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN
                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                        alpha-1; 3/4-fucosyltransferase; glycoprotein; fucosyltransferase;
                                     ;
14.9%; Score 68; DB 8; Length 425; 100.0%; Pred. No. 8e-60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 425;
                                   0; Indels
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Pred. No. 8e-60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14.9%; Scor.
100.0%; Pred. No. c.
0; Mismatches
           100.0%; Pred. ....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Helicobacter pylori; strain 26695FutA.
                                                                                                                                                                                                                                                                         ADJ27355 standard; protein; 425 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Example 1; Fig 6; 84pp; English.
                                                                                                                                                                                                                                                                                                                                                                                      Alpha-1,3/4-fucosyltransferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (NEOS-) NEOSE TECHNOLOGIES INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          23-JUL-2002; 2002US-0398156P.
08-NOV-2002; 2002US-0424894P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23-JUL-2003; 2003WO-US023155.
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                                   68; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Johnson KF, Bezila DJ;
                                                                                                                                                                             288 FDEAIDYI 295
                                                                                                                                               285 FDEAIDYI 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FDEAIDYI 292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FDEAIDYI 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2004-132958/13.
                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N-PSDB; ADJ27354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 425 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                           fucosyl; fucose.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO2004009793-A2
                                                                                                                                                                                                                                                                                                                                                20-MAY-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                68;
                                                                                                           228
                                                                                                                                                                                                                                                                                                              ADJ27355;
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                  Best Local
Matches 6
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Gaps

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Matches

셤 ŝ AEB70145 standard; protein; 446 AA.

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Helicobacter pylori; strain 26695A.
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The invention relates a purified transmembrane segment-free alpha 1,3fucosyltransferase polypeptide, having a repeat of the sequence: X\_1.X\_2fucosyltransferase polypeptide, having a repeat of the sequence: X\_1.X\_2fucusyltransferase polypeptide, having a repeat of the sequence: X\_1.X\_2Leu-Asg-X\_3-X\_4-Tyr, where X\_1, X\_2 and X\_4 is a Asp or Asn; and X\_3 is a

[1]. Val Or Ala. Also included are the mucleic acid encoding the protein

(including its complement or fragment), a vector containing the mucleic acid, a host cell modified with the mucleic acid or its a

producing transmembrane segment-free alphal, 3- fucosyltransferase,
comparising a host cell modified with the mucleic acid or its a

producing fucosylated oligosaccharides, such as Lex, Ley or SLex, by
contacting the protein with a substrate such as Lex, Ley or SLex, by
contacting the produced oligosaccharides, or by culturing the cell,
contacting the host cell with a substrate, to produce oligosaccharides
and purifying the obtained oligosaccharides, or by culturing the cell,
contacting the host cell with a substrate, to produce oligosaccharides
and purifying the obtained oligosaccharides, or by culturing the cell,
contacting the host cell with a substrate, to produce oligosaccharides
and purifying the obtained oligosaccharides, or by culturing the order cell with a substrate, to produce oligosaccharides
and purifying the obtained oligosaccharides, or by contacting a sample with a
nucleic acid probe that hybridises to alphal,3-fucosyltransferase fusion protein pyptient of producing a transmembrane segment-free alphal,3contacting the mucleic acid using polymerase chain reaction (PCR). The
host cell is useful for producing a transmembrane segment-free alphal,3cupptide under conditions which allow expression and secretion of the
corpetion protein and solating the fusion protein. The presence of fusion protein in a sample encoded and infactive of infection by Helicobacter pylori or the presence
of malignant cells. The antibody is also useful as
fuco fucosyltransferase gene regulation. Oligosaccharides synthesised using the protein or cell are useful in the development of assays to detect mammalian tumours. The present sequence represents an H. pylori alphal, 3 fucosyltransferase encoded by the fucT gene. (Updated on 29-AUG-2003 to Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides. Example 3; Fig 6; 37pp; English. 98US-00092315. 07-DEC-2000; 2000US-00733524 UYAL-) UNIV ALBERTA VPI; 2002-582480/62 Ge Z; US2002068347-A1. 35-JUN-1998; 06-JUN-2002 Taylor DE,

Sequence 476 AA;

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                                                        225 EFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN 284
                             Gaps
14.9%; Score 68; DB 5; Length 476; 100.0%; Pred. No. 8.8e-60;
        100.0%; Prec. ...
                            Conservative
              Local Similarity
                             68;
 Query Match
                Best Loca
Matches
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> 셤 ð

FDEAIDYI 295

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         fucosyltransferase polynucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The
                                                                     4elicobacter pylori fucosyl transferase, PutB, protein, SEQ ID NO: 16.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H. pylori fucosyl transferase, FutA, protein fragment, SEQ ID NO: 66.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            225 BFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK 274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Johnson KF, Bezila DJ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
11.0%; Score 50; DB 9; Le
Best Local Similarity 100.0%; Pred. No. 1.6e-41;
Matches 50; Conservative 0; Mismatches 0;
                                                                                                  Fucosyltransferase; protein production; enzyme.
                                                                                                                                                                                                                                                                            /note= "Encoded by AG"
                                                                                                                                                                                      /note= "Encoded by GC"
                                                                                                                                                                                                                    /note= "Encoded by AG"
                                                                                                                                                                                                                                               'note= "Encoded by AG"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Claim 1; SEQ ID NO 16; 97pp; English.
                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AEB70195 standard; protein; 391 AA.
                                                                                                                              Helicobacter pylori; strain 1111.
                                                                                                                                                                                                                                                                                                                                                                                                                           (NEOS-) NEOSE TECHNOLOGIES INC
                                                                                                                                                                                                                                                                                                                                                                                              22-JAN-2004; 2004US-00764212.
                                                                                                                                                                                                                                                                                                                                                                   22-JAN-2004; 2004US-00764212.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Simala-Grant J, Taylor D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         06-OCT-2005 (first entry)
                                        (first entry
                                                                                                                                                                                                                                                                                                                                                                                                                                         (UYAL-) UNIV ALBERTA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 2005-521417/53.
                                                                                                                                                                          Misc-difference 168
                                                                                                                                                                                                      Misc-difference 355
                                                                                                                                                                                                                                   Misc-difference 408
                                                                                                                                                                                                                                                             Misc-difference 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                N-PSDB; AEB70144.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 446 AA;
                                                                                                                                                                                                                                                                                                           US2005164338-A1
                                                                                                                                                                                                                                                                                                                                       28-JUL-2005.
                                          06-0CT-2005
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             AEB70145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AEB70195
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This invention relates to novel isolated polynucleotides and the encoded polypeptides thereof, which are related to the fucosyltransferase enzymes (Puth and PutB) of Helicobacter pylori (H. pylori). Specifically, it refers to alpha 1-3/4 fucosyltransferase enzymes that can be used to chemically synthesise glycoproteins and glycolipids with the desired oligosaccharide moieties (i.e. by transfer of a fucose residue to N-acetylglucosamine), such that they are useful in the preparation of glycoconjugates. The present invention describes how bacterial fucosyltransferase is unaffected by the sialyation status of the acceptor sugar, as opposed to the mammalian homologue, and furthermore, bacterially expressed enzymes offer a large cost saving relative to mammalian expression systems. This polypeptide sequence is an H. pylori strain 1111 FutA protein sequence of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This sequence represents an alpha-1,3/4-fucosyltransferase protein which was used in the method of the invention for producing a fucosylated
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Producing fucosylated glycoprotein, by contacting recombinant fucosyltransferase protein with mixture comprising donor substrate and acceptor substrate on glycoprotein.
                                              New isolated polynucleotide encoding fucosyltransferase protein, usefu for synthesizing oligosaccharide moiety on a protein or lipid that is unglycosylated in its native form or for synthesizing glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             alpha-1; 3/4-fucosyltransferase; glycoprotein; fucosyltransferase; fucosyl; fucose.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  251 DAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     252 DAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 297
                                                                                                                                                                                                                                                                                                                                                                                                                 Length 432;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                 Score 46; DB 8; Lo
Pred. No. 1.8e-37;
                                                                                                                                                                                                                                                                                                                                                                                               10.1%; Scor.
100.0%; Pred. No. ..
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Helicobacter pylori; strain 1111 FutA.
                                                                                                               Claim 16; SEQ ID NO 4; 72pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADJ27347 standard; protein; 432 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Alpha-1,3/4-fucosyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (NEOS-) NEOSE TECHNOLOGIES INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-JUL-2003; 2003WO-US023155.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      23-JUL-2002; 2002US-0398156P.
08-NOV-2002; 2002US-0424894P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    20-MAY-2004 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                   46; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Johnson KF, Bezila DJ
WPI; 2004-123401/12.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2004-132958/13.
                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; ADJ27346.
             N-PSDB; ADJ77811
                                                                                                                                                                                                                                                                                                                                                                                  Sequence 432 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO2004009793-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      29-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADJ27347;
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 13
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCXSXLLLXBBXLXBBXLXBXBXBXBXBXBXBXCCCX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                          The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltranisferase polynucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase catalytic domain (amino acids 27-417) protein fragment.
                                                                                                                                                                                                                                                                                                                                New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FutA; FutB; alpha 1-3/4 fucosyltransferase; glycoprotein; glycolipid; fucose; N-acetylglucosamine; glycoconjugate; enzyme.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       226 DAYPSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      251 DAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10.1%; Score 46; DB 9; Length 391; 100.0%; Pred. No. 1.6e-37; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Helicobacter pylori strain 1111 FutA protein SeqID 4.
                                                                                                                                                                                                                                                                 Bezila DJ;
                 Fucosyltransferase; protein production; enzyme.
                                                                                                                                                                                                                                                                 Johnson KF,
                                                                                                                                                                                                                                                                                                                                                                                Disclosure; SEQ ID NO 66; 97pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADJ77812 standard; protein; 432 AA
                                               Helicobacter pylori; strain 1111.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (NEOS-) NEOSE TECHNOLOGIES INC.
                                                                                                                                                                                                               NEOSE TECHNOLOGIES INC
                                                                                                                                                 22-JAN-2004; 2004US-00764212.
                                                                                                                                                                                  22-JAN-2004; 2004US-00764212.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23-JUL-2002; 2002US-0398156P.
08-NOV-2002; 2002US-0424894P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23-JUL-2003; 2003WO-US023057.
                                                                                                                                                                                                                                                                 Simala-Grant J, Taylor D,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   46; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Bezila DJ;
                                                                                                                                                                                                                                UNIV ALBERTA
                                                                                                                                                                                                                                                                                               WPI; 2005-521417/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Helicobacter pylori
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity
Matches 46; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 391 AA;
                                                                              US2005164338-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO2004009838-A2
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                                                                                                               28-JUL-2005.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADJ77812;
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                                                                                                                                                                                                                                (UYAL-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 12
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Gaps

RESULT 15

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The present invention provides alpha-1,3/4-fucosyltransferase (also termed as fucosyltransferase) proteins and nucleic acids from various strains of Helicobacter pylori. This enzyme catalyzes the transfer of a fucose residue from a donor substrate to an acceptor substrate. The fucosyltransferase polymucleotides and polypeptides are useful for the synthesis of oligosaccharides, glycoproteins and glycolipids. The present sequence is Helicobacter pylori fucosyltransferase protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New isolated fucosyltransferase polynucleotides and polypeptides, useful for synthesizing oligosaccharides, glycoproteins, or glycolipids.
                         fucosyltransferase protein with a mixture comprising a donor substrate which comprises a fucosyl residue, and an acceptor substrate on a glycoprotein, under conditions such that the fucosyltransferase protein catalyzes the transfer of the fucose residue from a donor substrate to the acceptor substrate on the glycoprotein. The method is useful for producing fucosylated glycoprotein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Helicobacter pylori fucosyl transferase, FutA, protein, SEQ ID NO: 4.
                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                      ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       251 DAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           252 DAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 297
The method involves contacting a recombinant
                                                                                                                                                                                                                                                                                                                                             Length 432;
                                                                                                                                                                                                                                                                                                                                                                                                                  0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bezila DJ;
                                                                                                                                                                                                                                                                                                                                                 DB 8; Le
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Fucosyltransferase; protein production; enzyme
                                                                                                                                                                                                                                                                                                                           10.1%; bcc. No. 100.0%; Pred. No. 100.0%; Pred. No. 100.0%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 100.00%; Pred. No. 
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AEB70133 standard; protein; 432 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Helicobacter pylori; strain 1111.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (NEOS-) NEOSE TECHNOLOGIES INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              22-JAN-2004; 2004US-00764212.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      22-JAN-2004; 2004US-00764212.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 100.0
Matches 46; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    UNIV ALBERTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2005-521417/53.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  N-PSDB; AEB70132
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US2005164338-A1.
                                                                                                                                                                                                                                                                               Sequence 432 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   06-OCT-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28-JUL-2005
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AEB70133;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       UYAL-)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AEB70133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              88888888
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The invention relates a purified transmembrane segment-free alpha 1,3-
tucosyltransferase polyappide, having a repeat of the Sequence: X.1-X.2-
Leu-Arg-X.3.X.4-Tyr, where X.1, X.2 and X.4 is Asp or Asn; and X.3 is
Leu-Arg-X.3.X.4-Tyr, where X.1, X.2 and X.4 is Asp or Asn; and X.3 is
Leu-Arg-X.3.X.4-Tyr, where X.1, X.2 and X.4 is Asp or Asn; and X.3 is
Leu-Arg-X.3.X.4-Tyr, where X.1, X.2 and X.4 is Asp or Asn; and X.3 is
Leu-Arg-X.3.X.4-Tyr, where X.1, X.2 and X.4 is Asp or Asn; and X.3 is
Leu-Arg-X.3.X.4-Tyr, where X.1, X.2 and X.4 is Asp or Asp or Asi;
Inc. oronianing its complement or fragment), a vector containing the mucleic
Comprising a host cell modified with the nucleic acid or its
comprising a host cell modified with the nucleic acid or its
comprising the produced oligosaccharides, such as Lex, Ley or SLex, by
compacting the produced oligosaccharides, such as Lex, Ley or SLex, by
contacting the produced oligosaccharides, or by culcuring the cell,
contacting the botaciel with a substrate, to produce oligosaccharides
and purifying the obtained oligosaccharides. The nucleic acid is useful
contacting the obtained oligosaccharides. The nucleic asmple with a
producing decetting the nucleic acid, by contacting a sample with a
contacting the nucleic acid, by contacting a sample with a
polymcleotide, and detecting phyridisation of the probe; or by
multiying the nucleic acid using polymerase chain reaction (PCR). The
multiying the nucleic acid using polymerase chain reaction (PCR). The
cucosyltransferase-fusion prodein, by growing the host cell containing a
cucosyltransferase-fusion prodein, by growing the protein in the ample of the protein in a sample. The presence of the protein in a sample of the cucosyltransferase gene product activity. The nucleic of malignant cells. The antibody is also useful for diagnosing disorders
cucosyltransferase gene redulation. Oligosaccharides synthesised using
the protein or cell are useful in the development of assays to detect
cucosyltransferase encoded by the fuel of gene (Up
                                                                                                                                                                                                      Bnzyme, fucT, alphal,3 fucosyltransferase, oligosaccharide, Lex; Ley;
sLex; Helicobacter pylori infection; malignant cell; mammalian tumour.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Purified transmembrane segment-free alphal, 3-fucosyltransferase polypeptide useful for producing fucosylated oligosaccharides.
                                                                                                                                                                 H. pylori alphal, 3 fucosyltransferase #7.
                   ABG30887 standard; protein; 454 AA.
                                                                                                                                                                                                                                                                           Helicobacter pylori; strain 11637.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 3; Fig 6; 37pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                      07-DEC-2000; 2000US-00733524.
                                                                                                                                                                                                                                                                                                                                                                                                                                                98US-00092315
                                                                                                   (revised)
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (UYAL-) UNIV ALBERTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 2002-582480/62.
                                                                                                                                                                                                                                                                                                                  JS2002068347-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                05-JUN-1998;
                                                                                                   29-AUG-2003
21-OCT-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    faylor DE,
                                                             ABG30887;
4BG30887
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Sequence 454 AA;

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Gaps

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10.1%; Score 46; DB 9; Length 432; 100.0%; Pred. No. 1.8e-37; ive 0; Mismatches 0; Indels

Conservative

46;

Matches

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Local Similarity

Query Match

Sequence 432 AA;

DAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 297

251 DAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLH 296

ö 0; Gaps Query Match 9.0%; Score 41; DB 5; Length 454; Best Local Similarity 100.0%; Pred. No. 2.2e-32; Matches 41; Conservative 0; Mismatches 0; Indels

g ò

Search completed: August 11, 2006, 20:00:02 Job time : 121.966 secs

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GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
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OM protein - protein search, using sw model

Run on:

August 11, 2006, 20:00:25; Search time 21.4069 Seconds (without alignments) 2049.570 Million cell updates/sec

US-10-764-212-20

Title: Perfect score: Sequence:

OLIGO Gapop 60.0 , Gapext 60.0 Scoring table:

283416 segs, 96216763 residues Searched:

Word size :

283416 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Listing first 45 summaries

PIR 80:\*
1: pirl:\*
2: pir2:\*
3: pir3:\*
4: pir4:\* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

| Description         | nsfe | fucosyltransferase | alpha (1,3)-fucosy |        | hypothetical prote | DNA polymerase hom | conserved hypothet | ZK112.7 protein - | hypothetical prote | major merozoite su | probable pyrophosp | large conductance | major merozoite su | glycoprotein, 190K | probable nucleotid | hypothetical prote |        |        | n.     | anthranilate synth | endopeptidase-rela | hypothetical prote |        | hypothetical prote | two-component resp | ×      | glycoprotein 185 - | hypothetical prote |        |
|---------------------|------|--------------------|--------------------|--------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------|--------|--------|--------------------|--------------------|--------------------|--------|--------------------|--------------------|--------|--------------------|--------------------|--------|
| ΩI                  |      | C64601             | B71914             | G71862 | G83712             | S39814             | H70414             | S44887            | T10336             | A43854             | AC0264             | F75276            | PQ0125             | 803290             | C97249             | B90131             | E82457 | H97620 | AG2843 | G64329             | B75359             | E84078             | T22314 | T47706             | C69859             | B24796 | A25814             | S52775             | D70818 |
| DB                  | ~    | N                  | 7                  | 7      | 0                  | ~                  | Н                  | ~                 | ~                  | N                  | ~                  | ~                 | ~                  | N                  | ~                  | N                  | 7      | N      | 7      | N                  | 0                  | N                  | N      | 0                  | ~                  | N      | N                  | Н                  | 7      |
| Length              | 425  | 476                | 454                | 436    | 174                | 289                | 764                | 3343              | 79                 | 89                 | 128                | 128               | 138                | 146                | 152                | 153                | 154    | 162    | 162    | 197                | 208                | 215                | 216    | 218                | 228                | 233    | 233                | 305                | 310    |
| &<br>Query<br>Match | 14.9 | 14.9               | 8.6                | 8.3    | 1.8                | 1.8                | 1.8                | 1.8               | •                  | 1.5                | 1.5                | 1.5               | 1.5                | 1.5                | 1.5                | 1.5                | 1.5    | •      | •      | •                  | 1.5                | •                  | •      | 1.5                | ٠                  | 1.5    | ٠                  | •                  | 1.5    |
| Score               |      | 68                 | 39                 | 38     | æ                  | œ                  | œ                  | α,                | 7                  | 7                  | 7                  | 7                 | 7                  | 7                  | 7                  | 7                  | 7      | 7      | 7      | 7                  | 7                  | 7                  | 7      | 7                  | 7                  | 7      | 7                  | 7                  | 7      |
| Result<br>No.       | -    | 8                  | m                  | 4      | S                  | 9                  | 7                  | 80                | 60                 | 10                 | 11                 | 12                | 13                 | 14                 | 15                 | 16                 | 17     |        | 19     | 70                 | 21                 | 22                 | 23     |                    | 25                 | 26     | 27                 | 28                 | 29     |

| glycerol-3-phospha | glycerol-3-phospha | oxidoreductase, al | glyceraldehyde-3-p | iron(III)-binding | hypothetical prote | hypothetical prote | glyceraldehyde-3-p | hypothetical prote | glyceraldehyde-3-p | hypothetical prote | glyceraldehyde-3-p | F13K23.15 protein | multidrug resistan | glyceraldehyde-3-p | tryptophan permeas |
|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|
| H71876             | A64640             | D87576             | A24430             | AG3582            | AC2601             | T23311             | DEUT1C             | D97383             | B24430             | T32555             | JQ1285             | F86262            | B84060             | DEPMINA            | C44038             |
| 0                  | N                  | ~                  | N                  | 0                 | 7                  | 0                  | н                  | 7                  | ~                  | ~                  | ~                  | N                 | N                  | -                  | N                  |
| 312                | 312                | 314                | 336                | 338               | 354                | 357                | 359                | 364                | 385                | 392                | 396                | 399               | 401                | 405                | 417                |
| 1.5                | 1.5                | 1.5                | 1.5                | 1.5               | 1.5                | 1.5                | 1.5                | 1.5                | 1.5                | 1.5                | 1.5                | 1.5               | 1.5                | 1.5                | 1.5                |
| 7                  | 7                  | 7                  | 7                  | 7                 | ۲                  | 7                  | 7                  | ,                  | 7                  | 7                  | 7                  | 7                 | 7                  | 7                  | 7                  |
| 30                 | 31                 | 32                 | 33                 | 34                | 35                 | 36                 | 37                 | 38                 | 39                 | 40                 | 41                 | 42                | 43                 | 44                 | 45                 |

### ALIGNMENTS

| RESULT 1<br>C64567<br>fucosyltransferase - Helicobacter pylori (strain 26695)                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br>C;Species: Helicobacter pylori<br>C;Date: 09-Aug-1997 #sequence_revision 09-Aug-1997 #text_change 09-Jul-2004                                                                                                                                                           |
| <br>C.Accession: Cotso. Rarlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, R.D.; R.Tomb, J.F.; White, O.; Kerlavage, A.R.; Clayton, R.; Khalak, H.G.; Glodek, A.; McKenne) Peterson, S.; Loftus, B.; Richardson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McKenne) |
| son, J.D.; Kelley, J.M.; Cotton, M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey, L.<br>Nature 388, 539-547, 1997                                                                                                                                                       |
| <br>A;Authors: Wallin, B.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser, C. <sup>h</sup> A;Title: The complete genome sequence of the gastric pathogen Helicobacter pylori.                                                                                |
| <br>A;Reference number: A64520; MUID:97394467; PMID:9252185<br>A;Accession: C64567                                                                                                                                                                                          |
| <br>A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: DNA                                                                                                                                                                      |
| A;Residues: 1-425 <tom><br/>A;Cross-references: UNIPROT:025142; UNIPARC:UP100000D70CA; GB:AE000554; GB:AE000511; NID:</tom>                                                                                                                                                 |
| Query Match 14.9%; Score 68; DB 2; Length 425;<br>Rest Local Similarity 100.0%; Pred. No. 1.46-63;                                                                                                                                                                          |

Gaps ö Indels Best Local Similarity 100.0%; Pred. No. 1.46-53; Matches 68; Conservative 0; Mismatches 0;

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287 225 EFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN 284 ઠે

285 FDEAIDYI 292 |||||||| 288 FDEAIDYI 295 유 Š 셤

fucosyltransferase - Helicobacter pylori (strain 26695)

C;Species: Helicobacter pylori C;Species: Helicobacter pylori C;Species: Helicobacter pylori C;Accession: C64601 R;Tomb, Jr;F, White, O.; Kerlavage, A.R.; Clayton, R.A.; Sutton, G.G.; Fleischmann, R.D.; Peterson, S.; Loftus, B.; Richardson, D.; Dodson, R.; Khalak, H.G.; Glodek, A.; McKenney, Son, J.D.; Kalley, J.M.; Cotton, M.D.; Weidman, J.M.; Fujii, C.; Bowman, C.; Watthey, L. Nature 388, 539-547, 1997 A;Authors: Wallin, E.; Hayes, W.S.; Borodovsky, M.; Karpk, P.D.; Smith, H.O.; Fraser, C.N. A;Title: The complete genome sequence of the gastric pathogen Helicobacter pylori. A;Reference number: A64520; MUID:97394467; PMID:9252185

A;Status: preliminary; nucleic acid sequence not shown; translation not shown A;Molecule type: DNA A;Residues: 1-476 <TOM> A;Cross-references; UNIPROT:O25366; UNIPARC:UPI00000D70CB; GB:AE000578; GB:AE000511; NID:

Query Match

DB 2; Length 476; 14.9%; Score 68;

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A;Residues: 1-764 <AQF>
A;Cross-references: UNIPROT:O67347; UNIPARC:UPI0000565BC; GB:AE000734; GB:AE000657; NID:
A;Experimental source: strain VF5
                                                                                     Ritakami, H.; Nakasone, K.; Takaki, Y.; Maeno, G.; Sasaki, R.; Masui, N.; Fuji, F.; Hiran Nucleic Acids Res. 28, 4317-4331, 2000
A;Title: Complete genome sequence of the alkaliphilic bacterium Bacillus halodurans and chieference number: A83650; MUID:20512582; PMID:11058132
A;Accession: G83712
A;Status: preliminary
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Molecule type: DNA
A;Residues: 1-289 - DOH>
A;Cross-references: UND:Q36545; UNIPARC:UPI000008F158; EMBL:X74132; NID:g439279; PIDN
A;Experimental source: strain Halo; etiolated shoots
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      R;Deckert, G.; Warren, P.V.; Gaasterland, T.; Young, W.G.; Lenox, A.L.; Graham, D.E.; Ove
                                                                                                                                                                                                                                                                                              A;Residues: 1-174 <STO>
A;Cross-references: UNIPROT:Q9KFH6; UNIPARC:UPI00000C38D5; GB:AP001508; GB:BA000004; NID:
A;Experimental source: strain C-125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CjAccession: 339814

Ribohmen, G.; Tudzynski, P.
Curr. Genet. 25, 59-65, 1994

A;Title: A DNA-polymerase-related reading frame (pol-r) in the mtDNA of Secale cereale.

A;Reference number: 339814; MUID:94363738; PMID:8082167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nature 392, 353-358, 1998
A;Title: The complete genome of the hyperthermophilic bacterium Aquifex aeolicus.
A;Reference number: A70300; MUID:98196666; PMID:9537320
A;Accession: H70414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA polymerase homolog pol-r - rye mitochondrion (strain Halo)
C;Species: mitochondrion Secale cereale (rye)
A;Variety: strain Halo
C;Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              conserved hypothetical protein aq 1328 - Aquifex aeolicus
C;Species: Aquifex aeolicus
C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 09-Jul-2004
Species: Bacillus halodurans
Date: 01-Dec-2000 #sequence_revision 01-Dec-2000 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Gene: BH0503
C;Superfamily: Deinococcus radiodurans hypothetical protein DR0763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 289;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 1.8%; Score 8; DB 2; Best Local Similarity 100.0%; Pred. No. 4.6; Matches 8; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 1.8%; Score 8; DB 2
Best Local Similarity 100.0%; Pred. No. 2.6
Matches 8; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               299 QNAYLDML 306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Genome: mitochondrion C; Keywords: mitochondrion
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9 FIDSTHLD 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                20 FIDSTHLD 27
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        14 ONAYLDML 21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C, Accession: H70414
                                                                  C; Accession: G83712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Gene: pol-r
                                                                                                                                                                                                                                                                                                                                                                                                         C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
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C;Species: Helicobacter pylori
A;Variety: strain J99
A;Variety: strain J99
C;Becies: 12-Peb-1999 #sequence_revision 12-Peb-1999 #text_change 09-Jul-2004
C;Accession: G71862
R;Alm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, B.D.; Doig, P.C.; Smith, D.R.; Jross, C.; Gibson, R.Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; Vovis, G.P.; A;Title: Genomic sequence comparison of two unrelated isolates of the human gastric path A;Reference number: A71800; MUID:99120557; PMID:9923682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Molecule type: DNA
X;Residues: 1-436 <ARN»
A;Cross-references: UNIPROT:Q9ZKD7; UNIPARC:UP100000D36D2; GB:AE001528; GB:AE001439; NID
A;Experimental source: strain J99
                                                                                                                                                                                                                                                                                                                                                                                                                         alpha (1,3)-fucosyltransferase - Helicobacter pylori (strain J99)
C;Species: Helicobacter pylori
A;Variety: strain J99
C;Date: 12-Peb-1999 #sequence_revision 12-Peb-1999 #text_change 09-Jul-2004
C;Date: 12-Peb-1999 #sequence_revision 12-Peb-1999 #text_change 09-Jul-2004
C;Accession: B71914
R;Alm, R.A.; Ling, L.S.L.; Moir, D.T.; King, B.L.; Brown, B.D.; Doig, P.C.; Smith, D.R.; I ves, C.; Gibson, R.; Merberg, D.; Mills, S.D.; Jiang, Q.; Taylor, D.E.; Vovis, G.P.; A;Title: Genomic sequence comparison of two unrelated isolates of the human gastric path A;Reference number: A71800; MUID:99120557; PMID:9923682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;Molecule type: DNA
;Residues 1.454 ARNN-
;Residues: UNIPROT:09ZLI3; UNIPARC:UPI0000D3665; GB:AE001491; GB:AE001439; NID
;Experimental source: strain J99
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                                                                                                                                                228 EFLSOYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN 287
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                                                                                                 225 BFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN
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                                     Gaps
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                                     Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ARKILSYONTKRVFYTGENEVPNFNLFDYAIGFDELDF 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8.6%; Score 39; DB 2; Le
100.0%; Pred. No. 8.9e-33;
iive 0; Mismatches 0;
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100.0%; Pred. No. 9.8e-32;
         Best Local Similarity 100.0%; Pred. No. 1.6e-63; Matches 68; Conservative 0; Mismatches 0;
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Best Local Similarity 100.
Matches 39; Conservative
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Matches 38; Conservative
                                                                                                                                                                                                                         285 FDEAIDYI 292
                                                                                                                                                                                                                                                                                  288 FDEAIDYI 295
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G83712
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C;Accession: Aco264
R;Parkhill, J.; Wren, B.W.; Thomson, N.R.; Titball, R.W.; Holden, M.T.G.; Prentice, M.B.; deno-Tarraga, A.M.; Chillingworth, T.; Cronin, A.; Davies, R.M.; Davis, P.; Dougan, G.; Ii, M.; Rutherford, K.; Simmonds, M.; Skelton, J.; Stevens, K.; Whitehead, S.; Barrell, I Nature 413, 523-527, 2001
A;Title: Genome sequence of Yersinia pestis, the causative agent of plague.
A;Reference number: AB0001; MUID:21470413; PMID:11586360
                      C;Accession: A43854
R;Hui, G.S.; Hashimoto, A.; Chang, S.P.
Infect. Immun. 60, 1422-1433, 1993.
A;Title: Roles of conserved and allelic regions of the major merozoite surface protein (§ A;Reference number: A43854; MUID:92192814; PMID:1548068
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R;White, O.; Eisen, J.A.; Heidelberg, J.F.; Hickey, E.K.; Peterson, J.D.; Dodson, R.J.; F. M.; Shen, M.; Vamathevan, J.J.; Lam, P.; McDonald, L.; Utterback, T.; Zalewski, C.; Mal, S.; Smith, H.O.; Venter, J.C.; Fraser, C.M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Residues: 1-128 <WHI>
A;Cross-references: UNIPROT:O9RR4; UNIPARC:UPI00000D3FB5; GB:AE002072; GB:AE000513; NID:
A;Experimental source: strain Rl
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Cross-references: UNIPROT: Q8ZEJ8; UNIPARC: UP100000DCA34; GB: AL590842; PIDN: CAC90975.1;
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C;Species: 03-Dec-1999 #sequence_revision 03-Dec-1999 #text_change 09-Jul-2004
C;Date: 10-Mar-1993 #sequence_revision 18-Nov-1994 #text_change 31-Dec-2004
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                                                                                                                                                                                                                                                                    A;Cross-references: UNIPROT:0816A9; UNIPARC:UPI0000177F83
A;Experimental source: FVO isolate
A;Note: sequence inconsistent with the nucleotide translation
A;Note: sequence extracted from NCBI backbone (NCBIN:89242, NCBIP:89243)
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100.0%; Pred. No. 17;
rative 0; Mismatches
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100.0%; Pred. No. 24;
cive 0; Mismatches
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Matches 7; Conservative
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Matches 7; Conservative
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                                                                                                                                                                                                                     A; Molecule type: DNA
A; Residues: 1-89 <HUI>
                                                                                                                                                                     A;Accession: A43854
A;Status: preliminary
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A; Description: Sequence of the C. elegans cosmid ZK112.
A; Reference number: S44616
A; Accession: S44887
A; Accession: S44887
A; Molecule type: DNA
A; Residues: 1-3343 <DUZ>
A; Residues: 1-3343 <DUZ>
A; Cross-references: UNIPROT:P34616; UNIPARC:UPI000013BC7C; EMBL:L14324; NID:g289740; PID
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R;Abrens, C.A.; Russell, R.R.; Funk, C.J.; Evans, J.; Harwood, S.; Rohrmann, G.F.
R;Abrens, C.A.; Russell, R.R.; Funk, C.J.; Evans, J.; Harwood, S.; Rohrmann, G.F.
A;Tricle: Requence of the Orgyia pseudotsugata multinucleocapsid nuclear polyhedrosis
A;Reference number: Z17011; MUID:97271300; PMID:9126251
A;Accession: T10336
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C;Species: Plasmodium falciparum
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           C;Species: Caenorhabditis elegans
C;Date: 14-Sep-1994 #sequence_revision 12-May-1995 #text_change 09-Jul-2004
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                            AjGene: aq 1328
C;Superfamily: Aquifex aeolicus conserved hypothetical protein aq 1328
C;Keywords: ATP; nuclectide binding; P-loop
F;70-77/Region: nuclectide-binding motif A (P-loop)
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100.0%; Pred. No. 12;
tive 0; Mismatches
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ZK112.7 protein - Caenorhabditis elegans
                                                                                                                                                                                                                       Best Local Similarity 100.
Matches 8; Conservative
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Best Local Similarity 100.
Matches 8; Conservative
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EKILDAY 15
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A;Residues: 1-79 <AHR>
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Search completed: August 11, 2006, 20:09:13 Job time : 25.4069 secs
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Molecule type: DNA
A;Residues: 1-138 <KIM>
A;Residues: 1-138 <KIM>
A;Cross-references: UNIPROT:Q25960; UNIPARC:UPI0000082067; GB:M32116; NID:g160502; PIDN:
C;Superfamily: G surface protein
C;Keywords: glycoprotein; surface antigen
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A,Residues: 1-146 <SGTA-
A,Cross-references: UNIPROT:Q8T6A9; UNIPROT:Q9TZV2; UNIPROT:Q9TZU9; UNIPARC:UPI0000177F8
C;Keywords: glycoprotein
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R;Scherf, A.; Barbot, P.; Langeley, G.
Rucleic Acids Res. 17, 1774, 1989
A;Title: Sequence and length polymorphism of a major malaria vaccine candidate analysed A;Reference number: S03290; MUID:89160345; PMID:2646601
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A,Variety: isolate Bandia-Senegal
C,Date: 21-Nov-1993 #sequence_revision 10-Nov-1995 #text_change 31-Dec-2004
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A;Status: translation not shown
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A,Gene: DR2422
A,Map position: 1
C,Superfamily: yhdC protein
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R;Nolling, J.; Breton, G.; Omelchenko, M.V.; Markarova, K.S.; Zeng, Q.; Gibson, R.; Lee, J. Daly, M.J.; Bennett, G.N.; Koonin, B.V.; Smith, D.R.
J. Bacteriol. 183, 4823-4838, 2001
A;Fitle: Genome Sequence and Comparative Analysis of the Solvent-Producing Bacterium Clos A;Reference number: A96900; MUID:21359325; PMID:21359325
                                                                                                                                                  A;Accession: C97249
A;Status: preliminary
A;Molecule: type: DNA
A;Residus: 1-152 <NUR>
A;Cross-references: UNIPROT:Q97FA2; UNIPARC:UP100000CA65A; GB:AE001437; PIDN:AAK80782.1;
A;Experimental source: Clostridium acetobutylicum ATCC824
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C;Superfamily: ATPase likely involved in cell wall biosynthesis
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           GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
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| QBTMT6 METAC Q4JVZB_CORJK ASSY_CORGL Q3MDA9 9ACTO QBWV89 MYCPE QBPU19 METWA QBPU16 METWA QBTRXO METAC QBTTCB_METAC QBTTCB_BCANM | ALIGNMENTS  T. 1  4 HELPY  Ogl684  OGJ684  O1-CT-2000, integrated into UniProtKB/TrEMBL.  O1-OCT-2000, integrated into UniProtKB/TrEMBL.  O1-OCT-2000, integrated into UniProtKB/TrEMBL.  O1-TEB-2006, entry version 1.  Alpha-1,34-fucosyltransferase.  Name-fucTa;  Helicobacteraceae; Helicobacter pylori).  Bacteria; Proteobacteria; Epsilomproteobacteria; Campyl Helicobacteraceae; Helicobacter.  NCBL TaxID=210;  [1]  NUCLEOTIDE SEQUENCE.  STRAIN=U948;  RABNO D.A., Wang G., Palcic M.M., Taylor D.E.;  "Cloning and characterization of the alpha(1,3/4) fucos of Helicobacter pylori.";  Of Helicobacter pylori.";  Cloning and characterization of the alpha(1,3/4) fucos of Helicobacter pylori.";  Albiol. Chem. 275:4988-4994(2000).  [2]  STRAIN=U948;  Rabko D.A., Wang G., Palcic M.M., Taylor D.E.;  Submitted (FRB-2003) to the EMBL/GenBank/DDBJ databases Submitted (FRB-2003) to the EMBL/GenBank/DDBJ databases Copyrighted by the UniProt Consortium, see http://www.ubistributed under the Creative Commons Attribution-NoDe EMBL, AFF194963; AAF51291-2; Genomic_DNA.  GO: 0016020; C:membrane; IEA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | rase<br>livit<br>acid<br>10.<br>10, 1<br>027Fg                                                                                                                                                                              | HKPPLNVALANWPL<br>          <br>HKPPLNVALANWPL                      | KILSYQNTKRVFYTG<br>              <br> KILSYQNTKRVFYTG<br>TSPYKLKALYTLKKP: |
| 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8                                                                                                                                                                                                                                                                                              | ALI  Y PRELIMINARY; PRT;  , integrated into UniPr; , sequence version 2.  - funcyly version 17.  - funcyly version 17.  - funcyly version 17.  - funcyly version 17.  - funcyly version 17.  - funcyly version 17.  - funcyly version 17.  - funcyly version 17.  - funcyly version 17.  - sequence version 2.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18.  - sequence 18. | 17; F:fucosyltransfer<br>157; F:transferase act<br>86; P:protein amino<br>R01503; Glyco_trans<br>R11929; Glyco_trans<br>18ferase; Transferase<br>62 AA; 54560 MW,<br>100.0%; Scc<br>larity 100.0%; Pre<br>Conservative 0; b | LDAFIDSTHLDETT<br>               <br>LDAFIDSTHLDETT                 | PSDLVFGNPLEQAR<br>                                                        |
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07-FEB-2006, entry version 24.
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NCBI TaxID=210;
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PRELIMINARY;
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                                                                                  Fucosyltransferase.
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O25366;
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                                                                                                                      241 GYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHAHQN
                                                                                                                                                                                   301 AYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRDLNEP
                                   ASFVASNPNAPIRNAFYDALMAI BPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCFENSQ
                                                     181 ASFVASNPNAPIRNAFYDALNAIEPVASGGSVKNTLGYKVKNKNEFLSQYKFNLCFENSQ
                                                                                                   241 GYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDYIRYLHAHQN
                                                                                                                                                                  301 AYLDMLYENPLNTIDGKAGFYQDLSFEKILDFFKNILENDTIYHCNDAHYSALHRDLNEP
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"Molecular Cloning and Functional Expression of a Novel Helicobacter pylori {alpha}-1,4 Fucosyltransferase.";
Glycobiology 15:1076-1083(2005).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Helicobacter pylori (Campylobacter pylori).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
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GO; GO:0016020; C:membrane; IRA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl.
GO; GO:0016757; F:transferase activity, transferring glycosyl.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco_trans 10.
PANTHER; PTH411929; Glyco_trans 10.
Glycosyltransferase; Transferase.
SEQUENCE 432 AA; 50503 MW; 69D3A32FBD2F12C9 CRC64;
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                                                                                                                                                                                                                                                                                                                                                                                                                     432 AA.
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PubMed=16000696; DOI=10.1093/glycob/cwj004;
                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
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Qest35;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=210;
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Q25142_HELPY
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RESULT 2 **06ST35** 

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228 EFLSQYKFILCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN 287
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=26695 / ATCC 700392;
STRAIN=26695 / ATCC 700392;
STRAIN=26695 / ATCC 700392;
STRAIN=26695 / ATCC 700392;
Tomb J.-F., White O. Kerlawage A.R., Clayton R.A., Sutton G.G., Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S.R., Bougherty B.A., Nelson K.E., Quackenbush J., Zhou L., Kirkness E.F., Dougherty B.A., Nelson K.E., Quackenbush J., Zhou L., Kirkness E.F., Glodek A., McKenney K., FitzGerald L.M., Lee N., Adams M.D., Hickey B.K., Berg D.E., Gocayne J.D., Utterback T.R., Peterson J.D., Kalley J.M., Cotton M.D., Weidman J.F., Fujii C., Bowman C., Watthey I., Wallin E., Hayes W.S., Ebrodovsky M., Karp P.D., Smith H.O., Fraser C.M., Venter J.C.;
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                                                                                                                                                                                                            OrderedLocusNames=HP0379; ORFNames=HP_0379;
Helicobacter pylori (Campylobacter pylori).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
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Helicobacter pylori (Campylobacter pylori).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
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GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0001617; F:transferase activity, transferring glycosyl. .
GO; GO:0016486; F:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco_trans_10.
PANTHER; PTHR11929; Glyco_trans_10; IPANTHER; PTHR11929; Glyco_trans_10; I.
COMPLETE PROTECOME; Glycosyltransferase; REQUENCE 425 AA; 49329 MW; 1182AF180D124A34 CRC64;
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14.9%; Score 68; DB 2; L
Best Local Similarity 100.0%; Pred. No. 7.5e-60;
Matches 68; Conservative 0; Mismatches 0;
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NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
STRAIN=26695 / ATCC 700392;
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11-JAN-1998, integrated into UniProtKB/TrEMBL
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PIR; C64567; C64567.
TIGR; HP0379; -.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   228 EFLSQYKFULCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN 287
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AF006039; AAB93985.1; -; Genomic_DNA.

GO; GO:0016020; C:membrane; IEA.

GO; GO:0008417; F:fucosyltransferase activity; IEA.

GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.

GO; GO:0006486; P:protein amino acid glycosylation; IEA.
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                                                                                                                                                                                         Copyrighted by the UniProt Consortium, see http://www.uniprot.org/terms Distributed under the Creative Commons Attribution-NoDerivs License
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Tomb J.-F., White O., Kerlavage A.R., Clayton R.A., Sutton G.G., Fleischmann R.D., Ketchum K.A., Klenk H.-P., Gill S.R., Dougherty B.A., Nelson K.B., Quackenbush J., Zhou L., Kirkness B.F., Peterson S.N., Loftus B.K., Richardson D.L., Dodson R.J., Khalak H.G. Glodek A., McKenney K., FitzGerald L.M., Lee N., Adams M.D., Hickey B.K., Berg D.B., Gocayne J.D., Utterback T.R., Peterson J.D., Kelley J.M., Cotton M.D., Wellman J.F., Fujii C., Bowman C., Watthey L., Wallin B., Hayes W.S., Borodovsky M., Karp P.D., Smith H.O., Fraser C.M., Venter J.C.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-JAN.1998, integrated into UniProtKB/TrEMBL.
01-JAN.1998, sequence version 1.
07-FRB-2006, entry version 23.
Alpha (1,3)-fucosyltransferase (EC 2.4.1.-).
Name-fucT;
Helicobacter pylori (Campylobacter pylori).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Lewis X biosynthesis in Helicobacter pylori. Molecular cloning of
                                                                                                                                                                                                                                                                                          GO; GO:0016020; C:membrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:001677; F:transferase activity; IEA.
GO; GO:0016486; P:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco_trans_10.
PANTHER; PTHR11929; Glyco_trans_10; IFANTHER; PTHR11929; Glyco_trans_10; Complete proteome; Glycoopltransferase; Transferase.
SEQUENCE 476 AA; S5927 WW; 328FFDBBD36E1F74 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=NCTC 11637;
MEDLINE=97407924; PubMed=9261148; DOI=10.1074/jbc.272.34.21349;
MEDLINE S. L., Edbrooke M.R., Hodgman T.C., van den Eijnden D.H.,
Bird M.I.;
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                                                                                                                                                                                                                                                                                                                                                                                                                        14.9%; Score 68; DB 2; Length 476; 100.0%; Pred. No. 8.3e-60; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               333 AA.
                                                                                                                                                                                                                                    EMBL; AE000511; AAD07710.1; -; Genomic_DNA.
PIR; C64601; C64601.
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J. Biol. Chem. 272:21349-21356(1997).
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032631;
                                                                                                                                                              Nature 388:539-547(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                        68; Conservative
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288 FDEAIDYI 295
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                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
                                                                                                                                                                                                                                                                                 LinkHub; 025366; -.
                                                                                                                                                                                                                                                                  HP0651; -.
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                                                                                                                                                  pylori
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Distributed under the Creative Commons Attribution-NoDerivs License
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MEDLINE=99120557; PubMed=9923682; DOI=10.1038146495;
Alm R.A., Ling L.-S.L., Moir D.T., King B.L., Brown B.D., Doig P.C.,
Smith D.R., Noonan B., Guild B.C., Garge B.L., Carmel G.,
Tummino P.J., Caruso A., Uria Nickelsen M., Mills D.M., Ives C.,
Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E., Vovis G.F.,
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Nature 397:176-180(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Name=fucT; ORFNames=jhp_0596;
Helicobacter pylori 399 (Campylobacter pylori 399).
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BioCyc; HPYL85283.JHP0596-MONOMER; -.
GO; GO:0016020; C:membrane; IEA.
GO; GO:0016757; F:transferase activity; IEA.
GO; GO:00064817; F:transferase activity, transferring glycosyl.
GO; GO:0006486; P:protein amino acid glycosylation; IEA.
InterPro; IPR001503; Glyco. trans 10.
InterPro; PTM11929; Glyco. Trans 10; IO; I.
Complete proteome; Glycosyltransferase; Transferase.
SEQUENCE 454 AA; 53448 MW; 3262687131263AB0 CRC64;
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                                                                                                                                        9.0%; Score 41; DB 2; Length 333;
100.0%; Pred. No. 2e-32;
ive 0; Mismatches 0; Indels
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InterPro; IPR001503; Glyco_trans_10.
PANTHER; PTR11929; Glyco_trans_10; 1.
Glycosyltransferase; Transferase.
SEQUENCE 333 AA; 39154 MW; CFFCB1AC127E0A8C CRC64;
                                                                                                                                                                                                                                                                                             364 DDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLR 402
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01-MAY-1999, sequence version 1.
21-FEB-2006, entry version 23.
ALPHA-(1,3)-FUCOSYTRANSFERASE.
Name-fuct; ORFNames-jpp 1002;
Helicobacter pylori J99-(Campylobacter pylori J99).
                                                                                                                                                                                                                                                               251 DAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDY
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Best Local Similarity 100.0%; Pred. No. 2.8e-30;
Matches 39; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   372 DDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLRVNYDDLR
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PIR; B71914; B71914.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-MAY-1999, sequence version 1. 21-FEB-2006, entry version 23. ALPHA (1,3)-FUCOSYLTRANSFERASE.
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                                                                                                                                                                                Best Local Similarity rous. Matches 41; Conservative
                                                                                                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=85963;
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Q9ZKD7;
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PRT;
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MEDLINE=20416215; PubMed=10960088;
                                                                                                                                                                                      entry version 21
                                                                                                                                      PRELIMINARY;
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                        32; Conservative
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Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               83
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                                                                                                                                                                                                                          Bacteroides fragilis.
                                                                                                                                                                                                                                                                                          NUCLEOTIDE SEQUENCE.
 Query Match
Best Local Similarity
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Q9FDN3;
                                                                                                                                                                                       07-FEB-2006,
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GO; GO:0016020; C:nembrane; IEA.
GO; GO:0008417; F:fucosyltransferase activity; IEA.
GO; GO:0016757; F:transferase activity, transferring glycosyl. . .; IEA.
GO; GO:0016486; P:protein amino acid glycosylation; IEA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=NCTC 11639;
MEDLINE=97407925; PubMed=9261149; DOI=10.1074/jbc.272.34.21357;
Ge Z., Chan N.W.C., Palcic M.M., Taylor D.B.,
"Cloning and heterologous expression of an alphal,3-fucosyltransferase gene from the gastric pathogen Helicobacter pylori.";
J. Biol. Chem. 272:21357-21363(1997).
                                              MUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
MEDLINE=99120557; PubMed=9923682; DOI=10.1038/16495;
Alm R.A., Ling L.-S.L., Moir D.T., King B.L., Brown E.D., Doig P.C.,
Smith D.R., Noonan B., Guild B.C., deJonge B.L., Carmel G.,
Tummino P.J., Caruso A., Uria-Nickelsen M., Mills D.M., Ives C.,
Gibson R., Merberg D., Mills S.D., Jiang Q., Taylor D.E., Vovis G.F.,
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                                                                                                                                   "Genomic sequence comparison of two unrelated isolates of the human gastric pathogen Helicobacter pylori.";
Nature 397:176-180(1999).
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Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
Helicobacteraceae; Helicobacter.
Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales;
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100.0%; Pred. No. 2.9e-29;
vative 0; Mismatches 0; Indels
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PANTHER; PTHR11929; Glyco trans 10; 1.
Glycosyltransferase; Transferase.
SEQUENCE 478 AA; 56070 MW; ACD47A9C7D2D3266 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                78 ARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDF 115
                                                                                                                                                                                                                                                                                                                                                                                                                    78 ARKILSYQNTKRVFYTGENEVPNFNLFDYAIGFDELDF 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-JAN-1998, integrated into UniProtKB/TrEMBL
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-JAN-1998, sequence version 1.
07-FEB-2006, entry version 26.
Alphal,3-fucosyltransferase.
             Helicobacteraceae; Helicobacter
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                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 100...
Best Accessive 38; Conservative
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                          NCBI_TaxID=85963;
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Distributed under the Creative Commons Attribution-NoDerivs License
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                                                              Gaps
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GO; GO:0003700; F:transcription factor activity; IEA.

GO; GO:0005355; P:regulation of transcription, DNA-dependent; IEA.

GO; GO:0006350; P:transcription; IEA.

InterPro; IPR00647; HTH LysR.

InterPro; IPR005119; LysR_subst_bd.

InterPro; IPR011991; Wing_hlx_DNA_bd.

Pfam; PF00126; HTH 1; 1.

Pfam; PF03466; LysR_substrate; 1.

PRINTS; PR00039; HTHLYSR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOI=10.1128/JB.182.18.5059-5069.2000;
Socha B.K., Owena G. Jr., Smith C.J.;
"The redox-sensitive transcriptional activator OxyR regulates the
peroxide response regulon in the obligate anaerobe Bacteroides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
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Name=coxyR; OrderedLocusNames=BF1118;
Bacteroides fragilis (strain 74CC 25285 / NCTC 9343).
Bacteria; Bacteroidetes; Bacteroidetes (class); Bacteroidetes;
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Bacteroidaceae, Bacteroides.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J. Bacteriol. 182:5059-5069(2000).
-!- SIMILARITY: Contains 1 HTH lysR-type DNA-binding domain.
7.0%; Score 32; DB 2; Length 478;
100.0%; Pred. No. 4e-23;
lve 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2.0%; Score 9; DB 2; Length 308;
100.0%; Pred. No. 7.5;
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DNA-binding; Transcription; Transcription regulation.
SEQUENCE 308 AA; 35190 MW; 2A89F365C77A949F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Redox-sensitive transcriptional activator OxyR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ÖSLFQ8;
21-JUN-2005, integrated into UniProtKB/TrEMBL.
21-JUN-2005, sequence version 1.
07-FEB-2006, entry version 9.
                                                                                                                                                                                                                                                                                                                                                                                                01-MAR-2001, integrated into UniProtKB/TrEMBL 01-MAR-2001, sequence version 1.
                                                                                                                          251 DAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDF 282
                                                                                                                                                         DAYFSHIIPIYWGSPSVAKDFNPKSFVNVHDF 284
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                  100.0%; Preq. ...
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1.8%; Score 8;
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ProDom; PD007253; MS_channel; 1.
TIGRFAMB; TIGR00220; mscL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001185; MS channel.
Pfam; PF01741; MscL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genome Res. 13:1572-1579(2003).
                                                                                                                                                                                                                                     Transcription regulation. SEQUENCE 308 AA; 35248
                                                                                                                                                                                                                                                                                                       9; Conservative
                                                                                                                                                                                                                                                                                                                                  75 LEQARKILS 83
                                                                                                                                                                                                                                                                                                                                                           73
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Matches 9; Conserv
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65 LEQARKILS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Complete proteome. SEQUENCE 151 AA;
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                                                                                                                                                                                                                                                                             Query Match
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"Genomic analysis of Bacteroides fragilis reveals extensive DNA inversions regulating cell sufface adaptation.";
Proc. Natl. Acad. Sci. U.S.A. 101:14919-14924 (2004).
                       NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].
PubMed=15746427; DO1=10.1126/science.1107008;
Cerdeno-Tarraga A.-M., Patrick S., Crossman L.C., Blakely G.,
Abratt V., Lennard N., Poxton I., Duerden B., Harris B., Quail M.A.,
Barron A., Clark L., Corton C., Doggett J., Holden M.T.G., Larke N.,
Line A., Lord A., Norbertczak H., Ormond D., Price C.,
Asabbinowitsch B., Woodward J., Barrell B.G., Parkhill J.;
"Extensive DNA inversions in the B. fragilis genome control variable
                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                       EMBL; CR626927; CAH07035.1; -; Genomic_DNA.

GO; GO:0003700; F:transcription factor activity; IEA.

GO; GO:0006355; P:regulation of transcription, DNA-dependent; IEA.

GO; GO:0006350; P:resulation; IEA.

InterPro; IPR00847; HTH_LysR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=20416215; PubMed=10960088; DDI=10.1128/JB.182.18.5059-5069.2000; Rocha E.R., Owens G. Jr., Smith C.J.; "The redox-sensitive transcriptional activator OxyR regulates the peroxide response regulon in the obligate anaerobe Bacteroides
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Bacteroidaceae; Bacteroides.
NCBL_TaxID=817;
                                                                                                                                              Science 307:1463-1465(2005).
-!- SIMILARITY: Contains 1 HTH lysR-type DNA-binding domain.
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                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Indels
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SEQUENCE 308 AA; 35248 MW; B3AD6095FB895BA3 CRC64;
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                                                                                                                                                                                                                                                                                                     Pfam; PF00126; HTH 1; 1.
Pfam; PF00146; LysR substrate; 1.
PRINTS; PR0039; HTHLYSR.
Complete proteome; DNA-binding; Transcription;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-MAR-2001, integrated into UniprotKB/TrEMBL. 01-MAR-2001, sequence version 1. 07-FBB-2006, entry version 2. Redox-sensitive transcriptional activator OxyR. Names-oxyR; OrderedLocusNames=BP1334;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN=YCH46;
PubMed=15466707; DOI=10.1073/pnas.0404172101;
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Pred. No. 7.5;
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Local Similarity 100.0%; Pred. No. 7.5
Les 9; Conservative 0; Mismatches
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Q9FDN4;
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                                                                                                                                 gene expression.";
NCBI_TaxID=272559;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Distributed under the Creative Commons Attribution-NoDerivs License
                                                                                                                                                                                                                                              transcription, DNA-dependent; IEA
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NCBI_TaxID=152794;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=YS-314 / AJ 12310 / DSM 44549 / JCM 11189;
MEDLINE=22723752; PubMed=12840036; DOI=10.1101/gr.1285603;
Nishio Y., Nakamura Y., Kawarabayasi Y., Usuda Y., Kimura E.
Sugimoto S., Matsui K., Yamagishi A., Kikuchi H., Ikeo K.,
Gojobori T.;
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01-MAR-2003, sequence version 1.
07-FEB-2006, entry version 13.
Putative large-conductance mechanosensitive channel protein.
OrderedLocusNames=ECB0953;
Corynebacterium efficiens.
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                                                                                                                                                                                                        GO; GO:0003700; F:transcription factor activity; IEA. GO; GO:0006355; P:regulation of transcription, DNA-de GO; GO:0006350; P:transcription; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSITE, PSS0931; HTH LYSR; 1.
Complete proteome; DNA-binding; Transcription;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2.0%; Score 9; DB 2;
100.0%; Pred. No. 7.5;
ative 0; Mismatches
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GO; GO:0016020; C:membrane; IEA.
GO; GO:0005216; F:ion channel activity; IEA.
GO; GO:0006810; P:transport; IEA.
                                                                                       EMBL, AF206033, AAG02619.1; -; Genomic DNA.
EMBL, AP066841, BAD48083.1; -; Genomic DNA.
HSSP, P11221; 1169.
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                                                                                                                                                                                                                                                                                                      InterPro; IPR000847; HTH Lygr.
InterPro; IPR005119; Lysr_subst_bd.
InterPro; IPR011991; Wing_hlx_DNA_bd.
Pfam; PF00126; HTH 1; 1.
Pfam; PP03466; Lygr substrate; 1.
PRINTS; PR00039; HTHLYSR.
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RESULT 13 Q34YL2 9GA

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                   Salanoubat M., Genin S., Artiguenave F., Gouzy J., Mangenot S., Arlat M., Billault A., Brottier P., Camus J.C., Cattolico L., Chandler M., Choisne N., Claudel-Fenard C., Cunnac S., Demange N. Gaspin C., Lavie M., Moisan A., Robert C., Saurin W., Schiex T., Siguier P., Thebault P., Whalen M., Wincker P., Levy M., Welseenbach J., Boucher C.A.;
"Genome sequence of the plant pathogen Ralstonia solanacearum.";
Nature 415:497-502(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bacteria; Proteobacteria; Gammaproteobacteria; Pasteurellales;
Pasteurellaceae; Histophilus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDIJUR=97221585; PubMed=9068631; Potter A.A.; Potter A.A.; Cloning and characterization of bacteriophage-like DNA from Haemophilus sommus homologous to phages P2 and HP1.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 170;
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Pontarollo R.A.;
Thesis (1996), V. I. D. O., University of Saskatchewan.
    MEDLINE=21681879; PubMed=11823852; DOI=10.1038/415497a;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; U28154; AAC45160.1; -; Genomic DNA.
GO; GO:0019069; P:viral capaid assembly; IEA.
InterPro; IPR09225; Phage GPL.
Pfam; PF05926; Phage GPL;
SEQUENCE 170 AA; I9924 MW; 9D1C2C427A5F20B3 CRC64;
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100.0%; Pred. No. 47;
iive 0; Mismatches
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100.0%; Pred. No. 44;
tive 0; Mismatches
                                                                                                                                                                                                                                                                          EMBL; AL646067; CAD15637.1; -; Genomic_DNA.
BioCyc; RSOL305:RSC135-MONOWER; -.
BioCyc; RSOL305:RSC135-MONOWER; -.
InterPro; IPR009225; Phage_GPL.
Pfam; PR05926; Phage_GPL; T.
Emplee protecome
SEQUENCE 159 AA; 17077 MW; 67F13D46A7C90F
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Haemophilus somnus.
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Best Local Similarity 100.
Matches 8; Conservative
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Best Local Similarity 100.
Matches 8; Conservative
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Q48279 HAESO
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Larimer F., Land M.;
"Annotation of the draft genome of Alkalilimnicola ehrlichei MLHE-1.";
"Annotation of the draft genome of Alkalilimnicola ehrlichei MLHE-1.";
Submitted (NOV-2005) to the EMBL/GenBank/DDBJ databases.
-!- CAUTION: The sequence shown here is derived from an
EMBL/GenBank/DDBJ whole genome shotgun (WGS) entry which is
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN=MIHB-1;
US DOE Joint Genome Institute (JGI-PGF);
Copeland A., Lucas S., Lapidus A., Barry K., Detter J.C., Glavina T.,
Hammon N., Israni S., Pitluck S., Richardson P.;
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                            Gaps
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01-MAR-2002, sequence version 1.
07-FEB-2006, entry version 16.
PROBABLE BACTERIOPHAGE PROTEIN.
OrderedLocusNames=RSC1935, ORFNames=RS03504;
Ralsconia solanacearum (PseudOmonas solanacearum).
Bacteria; Proteobacteria; Betaproteobacteria; Burkholderiaceae; Bursholderiales;
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                                                                                                                                                                                                                                                                                                                                            OŘFNames=MlgDŘAFT 1278;
Alkalilimnicola ehrilochei MLHE-1.
Bacteria; Proteobacteria; Gammaproteobacteria; Chromatiales;
Ectothiorhodospiraceae; Alkalilimnicola.
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Search completed: August 11, 2006, 20:08:04 Job time : 165.721 secs

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SQUIENCE 6, Application US/09733524A

SQUIENCE 6, Application US/09733524A

Patent No. 653429B

GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1, 3

TITLE OF INVENTION: WUCKIC ACIDS ENCODING ALPHA-1, 3

TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/733,524A

CURRENT PILING DATE: 2000-12-07

PRIOR FILING DATE: 1998-06-05
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US-09-032-315-14
US-09-733-524A-14
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; Sequence 6, Application US/09092315
; Patent No. 639937
; GENERAL INFORMATION:
; APPLICANT: Car. Taylor, Diane E.
; APPLICANT: Ge, Zhongming
; ITLE OF INFORTION: ALPHAL, 3-FUCOSYLTRANFERASE
; FILE REPERRACE: 07254/049001
; CURRENT APPLICATION NUMBER: US/09/092,315
; CURRENT FILING DATE: 1997-06-06
; EARLIER PILING DATE: 1997-06-06
; NUMBER OF SEQ ID NOS: 22
; SEQTUANG: FASTSEQ for Windows Version 3.0
; SEQTUANG: 6
; SEQ ID NOS: 22
; LENGTH: 425
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GENERAL INFORMATION:
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APPLICANT: TAYLORY, Diane E.
APPLICANT: TAYLORY, Diane E.
APPLICANT: TAYLORY, DIANE E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 0724-049002
CURRENT APPLICATION NUMBER: US/09/73A
CURRENT PILING DATE: 2002-03-07
FRIOR APPLICATION NUMBER: US/09/733,524
PRIOR APPLICATION NUMBER: US/09/733,524
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: PSECSOF OF Windows Version 4.0
SEQ ID NO 6
LENGTH: 425
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14.9%; Score 68; DB 2; Length 425;
Best Local Similarity 100.0%; Pred. No. 2.2e-56;
Matches 68; Conservative 0; Mismatches 0; Indels
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Patent No. 702981.
Patent No. 702981.
Patent No. 702981.
APPLICANT: Taylor, Diane B.
APPLICANT: Ge, Zhongming
APPLICANT: University of Alberta
TITLE OF INVENTION: Alpha-1,3 Pucosyltransferase
FILE REFERENCE: 017398-000420US
                                                                                                                                                                                                                    ch 14.9%; Score 68; DB 1. Similarity 100.0%; Pred. No. 2.2 68; Conservative 0; Mismatches
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 6
LENGTH: 425
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                                                                                                                                 ; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-09-733-524A-6
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288 FDEAIDYI 295
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Best Local Similarity
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US-10-189-977A-6
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225 EFLSQYKFNLCFENSQGYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNN 284
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OTHER INFORMATION: H. pylori strain 26695B
OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
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14.9%; Score 68; DB 2; Length 476;
Best Local Similarity 100.0%; Pred. No. 2.4e-56;
Matches 68; Conservative 0; Mismatches 0; Indels
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APPLICANT: Taylor, Diane B.
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
TILE REFERENCE: 07254/049001
CURRENT PAPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1998-06-05
EARLIER APPLICATION NUMBER: US 60/048,857
EARLIER PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FASELSEQ for Windows Version 3.0
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CURRENT APPLICATION NUMBER: US/10/392,098A
CURRENT FILING DATE: 2003-03-17
PRIOR APPLICATION NUMBER: US/10/120,319
PRIOR FILING DATE: 2002-04-09
PRIOR FILING DATE: 1997-06-06
PRIOR FILING DATE: 1997-06-05
PRIOR PELING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR PLING DATE: 1998-06-05
PRIOR PLING DATE: 2000-12-07
NUMBER OF SEQ ID NOS: 30
SOFTWARE: PALENTIN NOS: 30
SOFTWARE: PALENTIN VEY: 2.1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-092-315-5; Sequence 5, Application US/09092315; Patent No. 6399337
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ORGANISM: Helicobacter pylori
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288 FDEAIDYI 295
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Query Match
Best Local Similarity 100.0
Matches 41; Conservative
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REPRESENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/10/189,977A
CURRENT PILING DATE: 2002-03-07
PRIOR PILING DATE: 2000-12-07
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-06
PRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFFWARE: FastSEQ for Windows Version 4.0
SEQ ID NO S
LENGTH: 476
TYPE: PRI
                 APPLICANT: Ge, Zhongming
TITLE OF INVENTION: NUCLEIC CLIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: NUCLEIC CLOSSING STRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US/09/733,524A
CURRENT PILING DATE: 2000-12-07
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR PILING DATE: 1999-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: PASLSEQ for Windows Version 4.0
SEQ ID NO 5
LENGTH: 476
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                                                                                                                                                                                                                                                                                                                                                                            ; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-09-733-524A-5
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US-10-189-977A-5
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Best Local Similarity 100.v
Diane B.
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Best Local Similarity
Matches 68; Conserva
APPLICANT: Taylor,
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OTHER INFORMATION: H. pylori strain 26695A

OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
US-10-392-098A-5
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                                               GENERAL INC. 7023931
GENERAL INC. 7023931
GENERAL INCORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: University of Alberta
APPLICANT: University of Alberta
TITLE OP INVENTION: Alpha-1,3 Fucosyltransferase
FILE REFERENCE: 01738-000420US
CURRENT APPLICATION NUMBER: US/10/130,392,098A
CURRENT FILING DATE: 2003-03-17
PRIOR PILING DATE: 2002-04-09
PRIOR PILING DATE: 1997-06-06
PRIOR FILING DATE: 1997-06-06
PRIOR FILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1000-12-07
NUMBER OF SEQ ID NOS: 30
SOFTWARE: Patentin Ver. 2.1
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APPLICANT Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT PPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1998-06-05
RARLIER APPLICATION NUMBER: US 60/048,857
EARLIER PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FASELSEQ FOR Windows Version 3.0
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Best Local Similarity 100.0%; Pred. No. 2.4e-56;
Matches 68; Conservative 0; Mismatches 0;
Sequence 5, Application US/10392098A
Patent No. 7029891
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Patent No. 6399337
GENERAL INFORMATION:
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ORGANISM: Helicobacter pylori
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US-09-092-315-8
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OTHER INFORMATION: H. pylori strain NCTC11637
OTHER INFORMATION: alpha-1,3-fucosyltransferase fucT (HpFucT)
                                                                                                    GENERAL INFOURATION:
GENERAL INFOURATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: Alpha-1,3 Fucosyltransferase
TITLE OF INVENTION: Alpha-1,3 Fucosyltransferase
FILE REFERENCE: 017398-00042005
CURRENT APPLICATION NUMBER: US/10/392,098A
CURRENT FILING DATE: 2003-03-17
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR PILING DATE: 1997-06-06
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
NUMBER OF SEQ ID NOS: 30
SOFTWARE: PATENTIN VET: 2.1
SEQ ID NO 8
SOFTWARE: PATENTIN VET: 2.1
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100.0%; Pred. No. 1.2e-30;
trive 0; Mismatches 0;
Sequence 8, Application US/10392098A Patent No. 7029891
GENERAL INFORMATION:
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US-09-092-315-2
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ORGANISM: Helicobacter pylori
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Best Local Similarity 100.0
Matches 41; Conservative
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US-09-733-524A-2
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                                                                                                            Sequence 8, Application US/09733524A

Patent No. 6534298
GENERAL INFORMATION:
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Ge, Zhongming
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EVERESSING THEM (amended)
TITLE OF INVENTION: EVERESSING THEM (amended)
TITLE OF INVENTION: EVERESSING THEM (amended)
CURRENT APPLICATION NUMBER: US/09/733,524A
CURRENT PILING DATE: 2000-12-07
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-06
NUMBER OF SEQ ID NOS: 27
SOOTWARR: PASELSEQ for Windows Version 4.0
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APPLICANT: Taylor, Diane E.

APPLICANT: Ge, Zhongming
TITLE OF INVENTION: WUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSION SYSTEMS FOR MAKING AND
TITLE OF INVENTION: EXPRESSION THEM (amended)
TITLE OF INVENTION: EXPRESSION THEM (amended)
TITLE OF INVENTION: EXPRESSION THEM (amended)
TITLE OF INVENTION: EXPRESSION THEM (amended)
TITLE OF INVENTION: BY 1026-03-07
CURRENT PILING DATE: 2002-2-03-07
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NOS: 27
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9.0%; Score 41; DB 2; Le
Best Local Similarity 100.0%; Pred. No. 1.2e-30;
Matches 41; Conservative 0; Mismatches 0;
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ORGANISM: Helicobacter pylori
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US-10-189-977A-8
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US-10-189-977A-8
                                                                                         US-09-733-524A-8
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TYPE: PRT
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LENGTH: 454
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251 DAYFSHTIPIYWGSPSVAKDFNPKSFVNVHDFNNFDEAIDY 291
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                                                                                                                                                                                                                                                                          APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/04901
CURRENT APPLICATION NUMBER: US/09/092,315
CURRENT FILING DATE: 1998-06-05
RARLIER APPLICATION NUMBER: US 60/048,857
RARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FASESQ for Windows Version 3.0
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8.6%; Score 39; DB 2; Li
Best Local Similarity 100.0%; Pred. No. 1.1e-28;
Matches 39; Conservative 0; Mismatches 0;
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GENERAL INFORMATION:
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RESULT 12 US-10-392-098A-8

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Sequence 2, Application US/10189977A

Sequence 2, Application US/10189977A

Sequence 2, Application US/10189977A

Patent No. 6962806

GENERAL INFORMATION:

APPLICANT: Taylor, Diane B.

APPLICANT: Taylor, Diane B.

TITLE OF INVENTION: FUCOSYLIRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

TITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REFERENCE: 07254-049002

CURRENT APPLICATION NUMBER: US/10/189,977A

CURRENT FILING DATE: 2000-12-07

PRIOR PILING DATE: 1998-06-05

PRIOR APPLICATION NUMBER: US 60/048,857

PRIOR FILING DATE: 1997-06-06

NUMBER OF SEQ ID NOS: 27

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 2

LENGTH: 486
                    APPLICANT: Ge, Zhongming
TITLE OF INVENTION: NUCLBIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: NUCLBIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OP INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US (99/7133,524A
CURRENT FILING DATE: 1998-06-05
PRIOR APPLICATION NUMBER: US 69/092,315
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR APPLICATION NUMBER: US 60/048,857
PRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
LUMBER OF SEQ ID NOS: 27
LENGTH: 486
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; ORGANISM: Helicobacter pylori
US-09-733-524A-2
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; ORGANISM: Helicobacter pylori
US-10-189-977A-2
APPLICANT: Taylor, Diane E.
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US-10-189-977A-2
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US-10-764-212-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: Taylor, Diane
APPLICANT: Taylor, Diane
APPLICANT: Johnson, Karl F.
APPLICANT: Bezila. Daniel James
APPLICANT: Bezila. Daniel James
APPLICANT: Governors of the University of Alberta
TITLE OF INVENTION: H. Pylori Fucosyltransferases
FILE REFERENCE: 019957-019400US
CURRENT APPLICATION NUMBER: US/10/764,212
CURRENT FILING DATE: 2004-01-22
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US-10-764-212-68
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Best Local Similarity 100.0%; Pred. No. 0;
Matches 456; Conservative 0; Mismatches
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Publication No. US20050164338A1
GENERAL INFORMATION:
APPLICAINT: Simala-Grant, Joanne
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SOFTWARE: PatentIn Ver. 2.1
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US-10-764-212-20
   SEQ ID NO 20
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                    GenCore version 5.1.9 (c) 1993 - 2006 Biocceleration Ltd.
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US-10-764-212-25
US-09-213-524-16
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US-10-130-319-6
US-10-130-319-5
US-10-130-319-5
US-10-392-098-5
US-10-392-098-5
US-10-392-098-5
US-10-764-212-66
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US-10-764-212-61
US-10-764-213-5
US-10-33-597-2
US-10-33-597-38-58
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APPLICANT: Ge, Zhongming
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/049001
CURRENT APPLICATION NUMBER: US/10/120,319
CURRENT FILING DATE: 2002-04-09
PRIOR PILING DATE: BARLIER FILING DATE: 1998-06-05
PRIOR PILING DATE: EARLIER FILING DATE: 1998-06-05
PRIOR PILING DATE: EARLIER FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 22
NUMBER OF SEQ ID NOS: 22
SOFTWARE: PASSEG for Windows Version 3.0
LENGTH: 425
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100.0%; Pred. No. 1.3e-55;
ative 0; Mismatches 0;
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Pred. No. 1.3e-55;
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FRATURE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 14.9%; Score 68; DB Best Local Similarity 100.0%; Pred. No. 1.3 Matches 68; Conservative 0; Mismatches
                PRIOR APPLICATION NUMBER: 09/092,315
PRIOR FILING DATE: 1998-06-05
PRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 20
SOFTWARE: PRESEQ for Windows Version 4.0
SEQ ID NO 16
LENGTH: 424
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APPLICANT: Taylor, Diane E.; APPLICANT: Ge, Zhongming
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 6, Application US/10120319; Publication No. US20020164749A1; GENERAL INFORMATION:
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; OTHER INFORMATION: Strain 26695B
US-09-733-524-16
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US-10-120-319-6
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288 FDEAIDYI 295
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Best Local Similarity
Matches 68; Conserv
  CURRENT FILING DATE:
                                                                                                                                                                                                                                                                                                                      NAME/KEY: PEPTIDE
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Patent No. US20020068347A1

GENERAL INFORMATION:
APPLICANT: The Governers of the University of Alberta, a Canada Corporation
APPLICANT: Taylor, Diane B.
APPLICANT: Taylor, Diane B.
TITLE OF INVENTION: FUCCOSTITRANSFERASES AND EXPRESSION SYSTEMS FOR WAKING AND
TITLE OF INVENTION: EXPRESSING THEM
FILTE OF INVENTION: EXPRESSING THEM
FILLE OF INVENTION: EXPRESSION 5754/049002
CURRENT APPLICATION NUMBER: US/09/733,524
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301 AYLDMLYENPLNTIDGKAGFYQDLSFEKILDFPKNILENDTIYHCNDAHYSALHRDLNEP
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OTHER INFORMATION: strain 955 FutA fucosyltransferase coding
OTHER INFORMATION: sequence amino acid translation peptide
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                                                                                                                                                                                                                                                                                                                                                            Sequence 25, Application US/10764212
Fublication No. US20050164338A1
GENERAL INFORMATION:
APPLICANT: Simala-Grant, Joanne
APPLICANT: Taylor, Diane
APPLICANT: Beaila, Daniel James
APPLICANT: Beaila, Daniel James
APPLICANT: Becel Pechnologies, Inc., APPLICANT: Governors of the University of Alberta
TITLE OF INVENTION: H. Pylori Fucosyltransferases
FILE REFERENCE: 019957-019400US
CURRENT APPLICATION NUMBER: US/10/764,212
CURRENT FILING DATE: 2004-01-22
NUMBER OF SEQ ID NOS: 81
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                                                                                                                                                                                       421 BRLLSKATPLLELSONTSFKIYRKAYOKSLPLLRAI 456
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SEQ ID NO 25
LENGTH: 227
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US-10-764-212-25
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NUMBER OF SEQ ID NOS: 20
SOFTWARE: PastSEQ for Windows Version 4.0
SEQ ID NO 15
LENCTH: 476
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; OTHER INFORMATION: Strain 26695A
US-09-733-524-15
                                              Taylor, Diane
Johnson, Karl F.
Bezila, Daniel James
                                                                                                                                                                                                                                                                                                                  TYPE: PRT
ORGANISM: Helicobacter pylori
                       APPLICANT: Simala-Grant, APPLICANT: Taylor, Diar
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Matches 68; Conserva
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TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3

TITLE OF INVENTION: PUCCESTURANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND

TITLE OF INVENTION: EXPRESSING THEM (amended)

FILE REFERENCE: 07254-049002

CURRENT APPLICATION NUMBER: US/10/392,098

CURRENT FILING DATE: 2003-03-17

PRIOR PILING DATE: 2000-12-07

PRIOR PLILING DATE: 1998-06-05

PRIOR PILING DATE: 1998-06-05

PRIOR PILING DATE: 1998-06-05

NUMBER OF SEQ ID NOS: 27

SOPTHARE: FREESEQ for Windows Version 4.0

SEQ ID NO 6
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                                                                                                                                                                                                                                                                                                                                     Length 425;
                                                                                                                                                                                                                                                                                                                Score 68; DB 4; Length ....; Pred. No. 1.38-55; Orients 0; Indels
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
FILE REFERENCE: 07254/04901
CURRENT APPLICATION NUMBER: US/10/189, 977
CURRENT FILING DATE: 2002-07-03
PRIOR APPLICATION NUMBER: US/09/092,315
PRIOR PLING DATE: 1998-06-05
PRIOR FILING DATE: 1999-06-05
NUMBER OF SEQ ID NOS: 22
SOFTWARE: FASTESQ-for Windows Version 3.0
SEQ ID NO 6
                                                                                                                                                                                                                                                                                                                                 ch 14.9%; Score 68; DB 1 Similarity 100.0%; Pred. No. 1.3 68; Conservative 0; Mismatches
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Publication No. US20030166212A1
GENERAL INFORMATION:
                                                                                                                                                                                                                                                     ; TYPE: PRT
; ORGANISM: Helicobacter pylori
US-10-189-977-6
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ORGANISM: Helicobacter pylori
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Best Local Similarity 100.0
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Best Local Similarity
Matches 68; Conserva
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                                                                                                                                                                                                                                LENGTH: 425
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Sequence 15, Application US/09733524

Sequence 15, Application US/09733524

Patent No. US20020068347A1

GENERAL INFORMATION:

APPLICANT: The Governmers of the University of Alberta, a Canada Corporation

APPLICANT: Taylor, Diane E.

APPLICANT: Ge, Zhongming

TITLE OF INVENTION: WUCLEIC ACIDE ENCODING ALPHA-1,3

TITLE OF INVENTION: PUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: EXPRESSING THEM

TITLE OF INVENTION: WUMBER: US/09/733,524

CURRENT FILING DATE: 1998-06-05

PRIOR APPLICATION NUMBER: 60/048,857

PRIOR APPLICATION NUMBER: 60/048,857

PRIOR APPLICATION NUMBER: 60/048,857
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US-10-764-212-12
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14.9%; Score 68; DB 3; Length 476

Best Local Similarity 100.0%; Pred. No. 1.4e-55;

Matches 68; Conservative 0; Mismatches 0; Indels
APPLICANT: Johnson, Karl F.
APPLICANT: Bezila, Daniel James
APPLICANT: Neose Technologies, Inc.
APPLICANT: Neose Technologies, Inc.
APPLICANT: Governors of the University of Alberta
TITLE OF INVENTION: H. Pylori Fucosyltransferases
FILE REFERENCE: 019957-019400US
CURRENT FILING DATE: 2004-01-22
NUMBER OF SEQ ID NOS: 81
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 12
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APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
APPLICANT: Taylor, Diane E.
TITLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
TITLE OF INVENTION: EXPRESSING THEM (amended)
FILE REFERENCE: 07254-049002
CURRENT APPLICATION NUMBER: US 0/9/733,524A
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR APPLICATION NUMBER: US 09/092,315
PRIOR PILING DATE: 1998-06-05
PRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 27
SOFTWARE: FASELSEQ for Windows Version 4.0
SEQ ID NO S: 27
LENGTH: 474
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US-10-764-212-16
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APPLICANT: Simala-Grant, Joanne, APPLICANT: Simala-Grant, Joanne, APPLICANT: Taylor, Diane, APPLICANT: Meose Technologies, Inc., APPLICANT: Recently, Governors of the University of Alberta, APPLICANT: Governors of the University of Alberta, TITLE OF INVENTION: H. Pylor: Rucosyltransferases, FILER REFERENCE: 019957-019400US; CURRENT RILING DATE: 2004-01-22; NUMBER OF SEQ ID NOS: 81
; SEQ ID NO 16; SEQ ID NOS: 81
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11.0%; Score 50; DB 5; Le
Best Local Similarity 100.0%; Pred. No. 1.7e-38;
Matches 50; Conservative 0; Mismatches 0;
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ilarity 100.0%; Pred. No. 1.4e-55;
Conservative 0; Mismatches 0;
                                                                                                                                         ; Sequence 5, Application US/10392098; Publication No. US20030166212A1; GENERAL INFORMATION:
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US-10-392-098-5
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  288 FDEAIDYI 295
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                                                                                    RESULT 11
US-10-392-098-5
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                                                                                                                                                     Sequence 5, Application US/10120319; Publication No. US20020164749A1
; General INFORMATION:
    APPLICANT: Taylor, Diane B.
; APPLICANT: Taylor, Diane B.
; APPLICANT: Taylor, Diane B.
; APPLICANT: Taylor, Diane B.
; APPLICANT: Taylor, Diane B.
; TITLE REFERENCE: 07254/049001
; CURRENT APPLICATION NUMBER: US/10/120,319
; CURRENT APPLICATION NUMBER: EARLIER APPLICATION NUMBER: 09/092,315
; PRIOR APPLICATION NUMBER: EARLIER FILING DATE: 1998-06-05
; PRIOR PILING DATE: EARLIER FILING DATE: 1998-06-05
; PRIOR FILING DATE: EARLIER FILING DATE: 1997-06-06
; NUMBER OF SEQ ID NOS: 22
; SOFTWARE: FASESEQ FOR Windows Version 3.0
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APPLICANT: Ge Zhongwing
TITLE OF INVENTION: ALPHA-1, 3-FUCOSYLTRANFERASE
TITLE REFERENCE: 07224/04901
CURRENT APPLICATION NUMBER: US/10/189,977
CURRENT FILING DATE: 12002-07-03
FRIOR PILING DATE: 1998-06-05
FRIOR PRILING DATE: 1997-06-06
FRIOR PRILING DATE: 1997-06-06
FRIOR SEQ IN NUMBER: US 60/048,857
FRIOR PILING DATE: 1997-06-06
NUMBER OF SEQ IN NOS: 22
SOFTWARE: FRSESQ for Windows Version 3.0
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ORGANISM: Helicobacter pylori
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288 FDEAIDYI 295
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LENGTH: 476
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LENGIH: 454
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OTHER INFORMATION: catalytic domain conserved region positions 27-417
227 BFLSQYKFNLCFENSQSYGYVTEKILDAYFSHTIPIYWGSPSVAKDFNPK 276
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                                                                                                                                                                                                               APPLICANT: Simala-drant, Joanne;
APPLICANT: Simala-drant, Joanne;
APPLICANT: Taylor, Diane
APPLICANT: Taylor, Daniel
APPLICANT: Bezila, Daniel James
APPLICANT: Bezila, Daniel James
APPLICANT: Governors of the University of Alberta
TITLE OF INVENTION: H. Pylori Fucosyltransferases
FILE REFERENCE: 01995-7-019400US
CURRENT APPLICATION NUMBER: US/10/764,212
CURRENT PILING DATE: 2004-01-22
NUMBER OF SEQ ID NOS: 81
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 66
ILENGTH: 391
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APPLICANT: Johnson, Karl F.
APPLICANT: Bezila, Daniel James
APPLICANT: Neose Technologies, Inc.
APPLICANT: Governors of the University of Alberta
TITLE OF INVENTION: H. Pylori Pucosyltransferases
FILE REFERENCE: 019957-01940005
CURRENT APPLICATION NUMBER: US/10/764,212
CURRENT FILING DATE: 2004-01-22
NUMBER OF SEQ ID NOS: 81
SOFWARE: Patentin Ver: 2.1
                                                                                                                         US-10-764-212-66; Sequence 66, Application US/10764212; Publication No. US20050164338A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 4, Application US/10764212
Publication No. US20050164338A1
GENERAL INFORMATION:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TYPE: PRT
ORGANISM: Helicobacter pylori
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ORGANISM: Helicobacter pylori
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Matches 46; Conservative
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LENGTH: 432
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APPLICANT: The Governers of the University of Alberta, a Canada Corporation APPLICANT: Taylor, Diane E. APPLICANT: Taylor, Diane E. APPLICANT: Ga. Zhongming TTTLE OF INVENTION: NUCLEIC ACIDS ENCODING ALPHA-1,3
TITLE OF INVENTION: FUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND TITLE OF INVENTION: FUCOSYLTRANSFERASES AND EXPRESSION SYSTEMS FOR MAKING AND FILLE OF INVENTION: EXPRESSING THEM TITLE OF INVENTION: EXPRESSING THEM CURRENT APPLICATION NUMBER: US/09/733,524
CURRENT FILING DATE: 1990-06-05
FRIOR FILING DATE: 1998-06-05
FRIOR FILING DATE: 1997-06-06
NUMBER OF SEQ ID NOS: 20
SOSTWARE: FASESEQ for Windows Version 4.0
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100.0%; Pred. No. 5.9e-30;
tive 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  LOCATION: (0)...(0)
OTHER INFORMATION: Strain 11637 from NCTC11637
Sequence 18, Application US/09733524 Patent No. US20020068347A1 GENERAL INFORMATION:
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Matches 41; Conserv
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Sequence 25102, A
Sequence 25102, A
Sequence 37749, A
Sequence 26636, A
Sequence 67711, A
Sequence 67710, A
Sequence 26635, A
Sequence 26636, A
Sequence 26636, A
Sequence 26636, A
Sequence 35964, A
                                                                              August 11, 2006, 20:11:06; Search time 17.3294 Seconds (without alignments) 1771.230 Million cell updates/sec
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8: /EMC_Celerra_SIDS3/ptodata/2/pubpaa/US11_NEW_PUB.pep:*
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GenCore version 5.1.9
Copyright (c) 1993 - 2006 Biocceleration Ltd.
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US-10-953-349-25102

US-11-056-355B-57749

US-11-056-355B-67711

US-11-056-355B-67711

US-11-056-355B-67711

US-11-056-355B-67711

US-11-056-355B-67710

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Gapop 60.0 , Gapext 60.0
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Perfect score:
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### ALIGNMENTS

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Sequence 26636, Application US/10953349
Publication No. US20060107345A1
GENERAL INFORMATION:
APPLICANT: ALEXANDROY, Nickolai et al.
TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
TITLE OF INVENTION: ENCONDED THERBY
FILE REPERENCE: 2750-1579PUS2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: Patentin version 3.3
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Publication No. US20060150283A1
GENERAL INFORMATION:
APPLICANT: Brover, Vyacheslav
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
                                                                                                                                                                                                                             Fragments and Corresponding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
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                                                                                           Sequence 57749, Application US/11056355B
; Publication No. US20660150283A1
; GENERAL INFORMATION:
; APPLICANT: Brover, Vyacheelav
; APPLICANT: Brover, Vyacheelav
; TITLE OF INVENTION: Sequence Determined DNA Fragment;
; TITLE OF INVENTION: Polypeptides Encoded Thereby
; FILE REFERENCE: 2750-1590F052
; CURRENT PRIOTATION NUMBER: US/11/056,355B
; CURRENT PILING DATE: 2005-02-14
; PRIOR APPLICATION NUMBER: 60/544,190
; PRIOR FILING DATE: 2004-02-13
; NUMBER OF SEQ ID NOS: 119966
; SEQ ID NO 57749
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; LOCATION: (1)...(245)
; OTHER INFORMATION: Ceres Seq. ID no. 14316381
US-11-056-355B-57749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT ORGANISM: Triticum aestivum
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ORGANISM: Glycine max
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            449 SLPLLRA 455
      195 PLNVALA 201
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14 SLPLLRA 20
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US-11-056-355B-67711
                                                                      RESULT 5
US-11-056-355B-57749
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SEQ ID NO 26636
TENGTH: 259
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICANT: ALEXANDROV, Nickolai et al.
TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
TITLE OF INVENTION: ENCONDED THERBY
TITLE REPERENCE: 2750-15790-15979042
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: PATENTIN version 3.3
SEQ ID NO 25102
LENGTH: 245
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Sequence 37062, Application US/10953349

Publication No. US20060107345A1

Publication No. US20060107345A1

SEQUENCE STORMATION:

APPLICANT: ALEXANDROV, Nickolai et al.

APPLICANT: ALEXANDROV, Nickolai et al.

TITLE OF INVENTION: ENCONNED THERBY

TITLE OF INVENTION: ENCONNED THERBY

FILE REPERENCE: 2750-15799US2

CURRENT APPLICATION NUMBER: US/10/953,349

CURRENT PILING DATE: 2004-09-30

NUMBER OF SEQ ID NOS: 40252

SOFTWARE: Patentin version 3.3
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100.0%; Pred. No. 44;
tive 0; Mismatches 0; Indels
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Pred. No. 44:
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Best Local Similarity 100.0%; Pred. No. 43;
Matches 7; Conservative 0; Mismatches
PRIOR FILING DATE: 2002-05-30
PRIOR APPLICATION NUMBER: JP 2002-383870
PRIOR FILING DATE: 2002-12-11
NUMBER OF SEQ ID NOS: 56791
SOFTWARE: Patentin Ver. 2.1
SEQ ID NO 47233
TYPE: PRT
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US-10-953-349-25102
'SEQUENCE 25102, Application US/10953349
'Publication No. US20060107345A1
'GENERAL INFORMATION:
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; ORGANISM: Zea mays subsp. mays
US-10-953-349-37062
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Matches 7; Conservative
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nes 7; Conservative
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US-10-449-902-47233
                                                                                                                                                                                                                                                                                                                                        356 DLNEPLV 362
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LENGTH: 245
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US-10-953-349-25101
US-10-953-349-25101
Sequence 25101, Application US/10953349
Publication No. US20060107345A1
GENERAL INFORMATION
TOTAL SECUENCE SEQUENCE DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
TITLE OF INVENTION: ENCONDED THERBY
TITLE OF INVENTION: ENCONDED THERBY
TITLE OF INVENTION: US/10/953,349
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
NUMBER OF SEQ ID NOS: 40252
SEQ ID NO 25101
LENGTH: 313
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APPLICANT: National Institute of Agrobiological Sciences.
APPLICANT: National Institute of Agrobiological Sciences.
APPLICANT: Bio-oriented Technology Research Advancement Institution.
APPLICANT: The Institute of Physical and Chemical Research.
APPLICANT: Foundation for Advancement of International Science.
TILLS OF INVENTION: FULL-LENGTH PLANT CDNA AND USES THEREOF
FILE REFRENCE: MOA-A020591-08.
CURRENT APPLICATION NUMBER: US/10/449,902
CURRENT FILING DATE: 2003-05-29
FRIOR PILING DATE: 2002-05-30
FRIOR PLING DATE: 2002-05-30
FRIOR FILING DATE: 2002-12-11
NUMBER OF SEQ ID NOS: 56791
SOFTWARE: PATENTIN UNIVERS.
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. 56;
                                                                                                                                                                    1.5%; Score 7; DB 7;
100.0%; Pred. No. 50;
tive 0; Mismatches
                                                        NAME/KEY: peptide

: COATION: (1)...(276)

: THEORMATION: Ceres Seq. ID no. 13595882

US-11-056-3558-67710
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Publication No. US20060123505A1
                                                                                                                                                                  Query Match
Best Local Similarity 100.
Matches 7; Conservative
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US-10-449-902-35964
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                                     FEATURE:
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Publication No. US20060107345A1

GENERAL INFORMATION:

GENERAL INFORMATION:

APPLICAMT: ALEXANDROW, Nickolai et al.

TITLE OF INVENTION: ENCONDED THERBY

TITLE OF INVENTION: ENCONDED THERBY

TITLE OF INVENTION: ENCONDED THERBY

TITLE OF INVENTION: US/10/953,349

CURRENT APPLICATION NUMBER: US/10/953,349

CURRENT PILING DATE: 2004-09-30

NUMBER OF SEQ ID NOS: 40252

SOFTWARE PATENT PILING

NUMBER OF SEQ ID NOS: 40252

SEQ ID NOS: 40255

LENGTH: 276
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Publication No. US20060150283A1

GENERAL INFORMATION:

APPLICANT: Brover Vyacheslav

APPLICANT: Alexandrov, Nickolai

TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding

TITLE OF INVENTION: Polypeptides Encoded Thereby

FILE REFERENCE: 2750-1550P0422

CURRENT APPLICATION NUMBER: US/11/056,355B

CURRENT APPLICATION NUMBER: US/11/056,355B

CURRENT APPLICATION NUMBER: 05/144,190

PRIOR PRILING DATE: 2004-02-13

PRIOR PRILING DATE: 2004-02-13
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100.0%; Pred. No. 50;
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FILE REFERENCE: 2750-1590FUS;
CURRENT APPLICATION NUMBER: US/11/056,355B
CURRENT FILING DATE: 2005-02-14
FRIOR APPLICATION NUMBER: 60/544,190
FRIOR PILING DATE: 2004-02-13
NUMBER OF SEQ ID NOS: 119966
SEQ ID NO 67711
LENGTH: 259
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Pred. No. 47;
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; OTHER INFORMATION: Ceres Seq. ID no. 13595883
US-11-056-3558-67711
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Best Local Similarity 100.0%; Pr
Matches 7; Conservative 0;
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ORGANISM: Triticum aestivum
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ORGANISM: Triticum aestivum
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SEQ ID NO 67710
LENGTH: 276
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ORGANISM: Triticum aestivum
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Matches 7; Conservative
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SLPLLRA 37
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TYPE: prt
ORGANISM: Glycine max
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                                                                                                                            Sequence 37061. Application US/10953349

Subjication No. US20060107345A1

GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
TITLE OF INVENTION: ENCONDED THERBY
TITLE OF INVENTION: ENCONDED THERBY
TITLE OF INVENTION: US/10/953,349
CURRENT APPLICATION NUMBER: 2044-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: PALENTIN Version 3.3
SEQ ID NO 37061
IENGTH: 313
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; Publication No. US20060107345A1
; GENERAL INFORMATION:
; APPLICANT: ALEXANDROV, Nickolai et al.
; TITLE OF INVENTION: SEQUENCE-DETERMINED DNA FRAGMENTS AND CORRESPONDING POLYPEPTIDES
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Sequence 57748, Application US/11056355B

Publication No. US20060150283A1

APPLICATION No. US20060150283A1

APPLICANT: Brover, Vyacheslav

APPLICANT: Alexandrov, Nickolai

TILLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding

TILLE OF INVENTION: Polypeptides Encoded Thereby

FILE REFERENCE: 2750-1590PUS2

CURRENT APPLICATION NUMBER: US/11/056,355B

CURRENT FILING DATE: 2005-02-14

PRIOR APPLICATION NUMBER: 60/544,190

PRIOR PRILING DATE: 2004-02-13

NUMBER OF SEQ ID NOS: 119966

SEQ ID NO 57748
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100.0%; Pred. No. 56;
tive 0; Mismatches
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; LOCATION: (1)...(313)

; OTHER INPERMATION: Ceres Seq. ID no. 14316380

US-11-056-355B-57748
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Matches 7; Conservative
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Matches 7; Conservative
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APPLICANT: Brover, Vyacheslav
APPLICANT: Alexandrov, Nickolai
APPLICANT: Alexandrov, Nickolai
APPLICANT: Alexandrov, Nickolai
TITLE OF INVENTION: Sequence Determined DNA Fragments and Corresponding
TITLE OF INVENTION: Polypeptides Encoded Thereby
FILE REFERENCE: 2750-1590FUS2
CURRENT APPLICATION NUMBER: US/11/056,355B
CURRENT FILING DATE: 2005-02-14
PRIOR FILING DATE: 2004-02-13
NUMBER OF SEQ ID NOS: 119966
SEQ ID NO 57747
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100.0%; Pred. No. 57;
ive 0; Mismatches
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; OTHER INFORMATION: Ceres Seq. ID no. 14316379
US-11-056-355B-57747
FILE REFERENCE: 2750-1579PUS2
CURRENT APPLICATION NUMBER: US/10/953,349
CURRENT FILING DATE: 2004-09-30
NUMBER OF SEQ ID NOS: 40252
SOFTWARE: Patentin version 3.3
SEQ ID NO 25100
LENGTH: 321
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Best Local Similarity 100.
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